

CHEMICAL MARKETS

RUPERT C. WATSON
Managing Editor

WILLIAMS HAYNES, Publisher

ELMER F. SHEETS
Assistant Editor

VOLUME XXIII

ESTABLISHED 1914

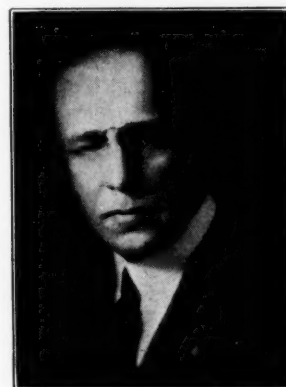
NUMBER 2

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Theodore Brentano Wagner, Universities of Wuerzburg, Freiburg and Basel, Ph.D. 1892; served as consulting chemical engineer, manager of development and general superintendent, Corn Products Co. for eight years and as an executive of Corn Products Refining Co., 1906 to 1919; U. S. Food Products Corp. and Liberty Yeast Corp. as vice-president. Dr. Wagner was a director of the N. Y. State Board Industrial Preparedness; associate member of the Naval Consulting Board and a member of the Hoover Food Control Committee; past president, American Institute of Chemical Engineers and at present is president of the Chemists' Club, N. Y.

CHEMICAL MARKETS, Inc., Publishers

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WILLIAMS HAYNES, PRESIDENT; ROBERT STRANGE, SECRETARY; D. O. HAYNES, JR., TREASURER

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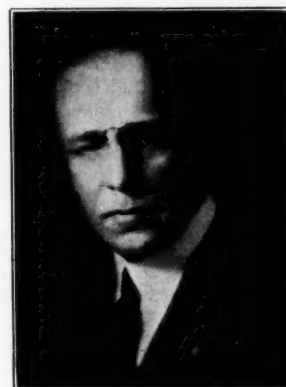
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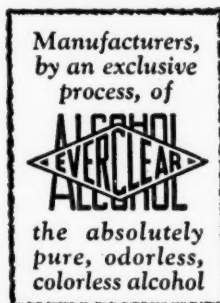
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NOTE: This is number TWENTY-FIVE of a series of advertisements which will appear in this and other trade publications. We have had so many comments and requests for copies of these advertisements that we have decided to issue the entire series in booklet form, after they have appeared in the publications.

As the edition will be limited to the number of requests on hand at the time of publication, we invite you to write for your copy now—it will be sent FREE when the booklet is completed. Address the Kentucky Alcohol Corporation direct, or any one of our sales representatives, whose names appear regularly in this space.

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CHEMICAL MARKETS

VOL. XXIII.

AUGUST, 1928

No. 2.

The Burden of Proof

HOWEVER mysterious and devious the way of the law may appear, there are certain fundamental concepts based upon justice, inherited in the main from the English common laws, which are so sound and simple that neither attorney nor layman ever question them. One of these basic principles is that a prisoner at the bar shall be assumed innocent, until proved guilty. This fundamental principle of law extends further than to the practice of criminal courts and has always been held most broadly.

IN direct contradiction of this common justice certain regulatory boards have, of late, assumed that if some chemicals are hazardous, therefore, any use is to be prohibited. Because certain chemicals, often upon conflicting or uncertain evidence, had in the past been assumed to be dangerous to health in a given process, or in a given industry, they glibly declare that any, and every, use of these chemicals in whatever field must be controlled. In their zeal to protect the health of industrial workers—a cause which any just man would surely see furthered—they propose unfair legislation or pass regulations straining the meaning of laws already enacted.

A FUNDAMENTAL question of right and wrong is involved in this assumption, a question quite as serious as the whole problem of health hazards itself. This pre-judgment on the part of these purely executive, regulating bodies, is

but another example of the dangerous, significant usurpation of both legislative and judicial powers by bureaucracy.

SUCH unwarranted actions strongly emphasize again the need for an unprejudiced, definite, scientific study of all chemical health hazards under the rapidly changing industrial conditions of to-day. Conclusions drawn from experience based on the sketchy data of fifteen years ago are now virtually useless. Any chemical, sufficiently dangerous to demand close regulation, to say nothing of prohibition, must from its very character furnish a wealth of damning evidence. But, there is no reason why the burden of collecting this evidence, and presenting it as proof, should be thrown entirely upon the manufacturers. Health hazards are a public concern, a common problem and responsibility. They should neither be used to further the interests of trade unions antagonistic to new methods or new materials, nor should they be allowed to furnish a profitable market for any chemical whose use is proved dangerous. If new industrial methods and materials are economically sound they will, in the long run, prevail. If a chemical material is truly hazardous under certain conditions, a substitute must, sooner or later, be found. It is the common interest of the Labor Boards, the workmen, and the manufacturers that regulations should only be drawn which are just, and which meet modern industrial conditions.

Chemical Publicity

Reading the daily newspapers one gathers that the latest, most efficient and only scientific farm relief is to come through the industrial consumption of farm surplus or farm waste by the chemical industry. This is an intriguing idea, not wholly original, but very timely and possessed to a high degree of that elusive quality known as "news" value.

Naturally, nearly everything at the Institute of Chemistry touching this subject, and there was a good deal on the program regarding the newer relationships between chemistry and agriculture, has been given the most prominent place in the press reports of the Evanston meetings. The publicity service of the Institute has obviously functioned well and in spite of the political campaign, the Olympic games, the trans-Atlantic flyers, and Mr. Tunney's retirement, chemistry has found a prominent place in the news columns. Such influential papers as the *Times* in New York, the *Chicago Tribune*, the *Boston Transcript* and the *Philadelphia Ledger*, have been particularly generous of their space. Again, the Institute has performed one of its useful purposes in a strikingly efficient way.

We are not among those who believe that publicity for the chemical industry has been overdone. We have plenty of opportunity to discover the amazing ignorance of the American public on chemical matters and their very hazy appreciation of the importance of chemicals in industry in our modern industrial economies. It is simply because we are so firmly convinced of the necessity of better education in these matters that we are so sensitive of chemical publicity which is ill-timed or mis-informing. The true facts of our astonishing technical developments are sufficiently startling and the real place of chemicals in industry is quite important enough to need no embellishments. Claims that are too broad or promises that are too optimistic hurt, rather than help, this cause. It is with real regret, therefore, that we have found the chemist posing in the daily press as the savior of the farmer. Undoubtedly, there lie great possibilities to be developed in the future in the better utilization of farm products in industry, through chemistry; but no chemical industrialist is so visionary that he believes we are on the edge of the development of vast enterprises consuming appreciable amounts of agricultural materials. Despite all the pother, the production of butyl alcohol and of starch from corn, are the only major chemical operations of the sort. The chemicals of farm

origin, which have a real commercial importance, may be numbered on the fingers and our chemical consumption of agricultural materials is still an insignificant drop in the bucket of our agricultural output.

It is neither kind to the farmer, nor just to the chemist to interpret a flock of interesting and suggestive experiments as potential industries, and to promote on paper laboratory-made chemical curiosities into the class of important industrial chemicals.

Barium Chloride

There is little to wonder at in the recent announcement by the Tariff Commission that an investigation will be conducted into the production costs of domestically manufactured barium chloride.

For several years this material has been a thorn in the side of domestic manufacturers. Because of the low price which has prevailed, this market holds no attraction to most manufacturers, with the result that there are to-day only three makers in this country. Two of these are large, powerful concerns with a diversified line of chemicals, and barium chloride has been carried along as something of a stepchild, probably in the hope that someday a revision in the tariff rates would put the article on a paying basis.

It is no secret that even at the present market level of from fifty-four to fifty-seven dollars a ton, American manufacturers have not been particularly successful in fighting off imported competition. The importers seem quite willing to meet any concession in price which American sellers care to make. It is difficult to see how the importers themselves relish such a demoralized market. One American manufacturer is authority for the statement that a price almost fifty per cent. above the prevailing market will be necessary to establish the sale of barium chloride on a really profitable basis. Without the detailed production costs, which the coming hearings will determine, it is hardly hazarding much to say that based on costs of raw materials, this statement is substantially correct.

While the mere announcement of an investigation by the Tariff Commission cannot be construed to mean an advance in duty, the case of the American barium chloride manufacturers has enough merit to set the trade speculating less on whether the Commission will act favorably on the measure, than why was not an investigation made at an earlier date?

Personal Tariffs

General Hancock's famous definition of the tariff as a local issue might to-day be even more restricted. The tariff is a personal issue, rousing all the quick emotions and backed by the deep convictions that are rooted in self-interest. No more innocent, yet damning, confirmation of this was ever brought forward than a resolution passed by the district convention of the Fisherman's Association of Cape Breton, Nova Scotia, on July 18th.

That strong representations be made to the Canadian Tariff Board to increase the duty on fish imported from Newfoundland, and to lower the duties on gasoline, engine parts, paint, etc., imported from the United States.

Here, with delightful frankness, is the core of the tariff problem. How more completely could the proposition be argued that what we all want in the tariff is as high a rate as we can get on all competitors products and no duty at all on the tools and raw materials of our business?

Such naivety as these simple fisherfolk display is rare in our more sophisticated, industrialized atmosphere; but if we are more apt in dressing up our tariff demands, we are even more concerned with tariff issues, for in no country has the protective wall of import duty been incorporated more intimately into the very foundations of our business. "Tariff talk" has been heard from both political camps even this early in the campaign and as always it has caught the attentive ear of business men. With the farmer demanding protection and the laborer recognizing that our high standard of living is in a measure at least due to protection it would appear that the party traditionally supporting high duties has the best of this argument. But what is a personal issue like the tariff between parties to-day?

The Spirit of Consolidation

As industrial consolidations grow in number and increase in strength, it has been clear to interested spectators of this recent economic phenomena that, while the underlying motive of combination is the same old primary motive of all business operations, viz., greater profits, the means by which these bigger corporations seek to accomplish this end has slowly, but surely been changing.

The first, obvious method was to secure a higher price by establishing a virtual control over production, and it was in the days of this monopolistic ideal that the Trusts, (always

spelled with a capital T,) ran amuck. It was not their purpose which raised that resentment among the public which led to the passage of the anti-trust legislation; but it was their methods of ruthless competition to establish control and of gouging prices once that control was established.

It is quite recently that they have been striving to reach the goal of profits through economies and to increase the volume of their business by widening the market through lower selling prices. These new means to accomplish the old end are quickly, and very naturally, reflected in the changing attitude of the public towards Big Business.

One of the closest students of this era, of consolidation, J. George Frederick, goes so far as to say bluntly: "No industrial consolidation made for the purpose of either restricting output or raising price can be permanently successful. The modern combine succeeds only where the management is inspired with the thought to cut costs by reducing duplication; increasing buying power; improving the production or the yield, and so to meet competition with a united front and lower selling price based soundly on these lower costs."

This furnishes us with an ingenious and apparently a very accurate, yardstick for measuring the capabilities of the new combinations. Apply it to discover whether brute force of mere size and financial strength, or skill in management and production is the dominant spirit of our own big companies. The results of such a test are sometimes surprising and always illuminating.

THE CHASE



Chicago Tribune

They Say:—

The notion that there is only a certain amount of business in the world to be done, and that international business is only a contest to see who can get the most of it is as false and unsound and disintegrating as the notion that there is only so much work in the world to be done and that the only way for our workers to be prosperous is to do as little as they can in order not to exhaust the supply.—*Owen D. Young.*

There is a feeling of hopefulness in regard to the outlook for trade. It is of fair volume in some directions even now. On the whole, industry is not active and wholesale business still leaves not a little to be desired. Trade is in better shape than it was a year ago. Then it was dying down; now it tends to increase.—*Commercial and Financial Chronicle.*

Let all sellers insist on seeing all submitted prices when price concessions are demanded. The purchaser who is "on the square" will show them. Business shouldn't be stud poker with all the cards turned down.—*Edward J. Mehren.*

Read trade literature. Study your business and other men's businesses. Talk with people and get their views and their experiences. Then go one step farther. Make that information work for you.—*"The Bulls Eye."*

Research to increase the industrial demand for farm products offers more promise to agriculture than any other single proposal that has ever been advanced.—*Wheeler McMillen, Assoc. Editor, Farm and Fireside.*

Of the quarter million firms in the United States, the great majority remain unconverted to scientific research as the best insurance against many types of disaster.—*Industrial and Engineering Chemistry.*

What this country needs more than anything else is a unified and well defined national tariff policy,—one which will not be disturbed by the political fortunes of the two major parties.—*Carl R. DeLong.*

American industries, so long as they have the advantage of a tariff, do not need to cut wages to manufacture on even terms with Europe.—*Samuel M. Vauclain.*

American business men in constantly increasing numbers are realizing the justice, speed and economy which is afforded by arbitration.—*Charles M. Schwab.*

Manufacture of domestic rubber will soon be a reality.—*Thomas A. Edison.*

One of the highest and most sacred rights of every honest business is the right to be let alone. It is the duty of the Government not to place on honest business and unjust burden.—*W. E. Humphrey, Federal Trade Commission.*

The determination of technical tariff schedules should be placed in the hands of a board with all the power and dignity of the Federal Reserve System. The one is as complicated and delicate as the other.—*Dr. S. I. Miller, National Ass'n of Credit Men.*

Ten Years Ago

From "Drug & Chemical Markets", August 1918

Total production of soda ash in the United States in 1917 amounted to 2,023,841 tons, compared with 1,733,516 tons in 1916, according to statistics compiled by R. C. Wells, United States Geological Survey, Department of Interior.

It is more than probable, although no definite decision has been reached, that the Semet-Solvay Co. at Syracuse will manufacture TNT. The War Department, however, seems to favor the building of the plant in some other location.

Mexico's large deposits of potash may be used in making powder here, according to a report from R. C. Bateman, New York, who recently returned from an eight months' trip through Central Mexico.

An initial investment of \$5,000,000 with plans for an increase to \$10,000,000 is called for in the contract for the plant of the American Cellulose and Chemical Manufacturing Co., Cumberland, Md.

War Trade Board has placed shellac, button lac, seedlac, etc., on the list of restricted imports. All outstanding licenses for their importation have been revoked as after August 15, 1918.

Birmingham Coke and By-Products Co., Birmingham, Ala., has begun the construction of a plant for the manufacture of chemicals and to supply coke to the Government.

The largest experimental plant in the United States is in operation at the Department of Agriculture Experiment Farm, Arlington, Va., for the manufacture of fixed nitrogen.

John F. Queeny, president, Monsanto Chemical Works, St. Louis, heads a movement for the manufacture of sea-planes capable of making trans-Atlantic flights.

Usefulness of nitrobyronel, the new explosive stronger than TNT, has already been demonstrated for industrial purposes. It is now being tested for war purposes.

National Aniline and Chemical Co. Inc. applies for right to manufacture forty-three additional dyes and dye-making processes, covered by German patents.

Seizure of four enemy-owned corporations with a total capitalization in excess of \$2,000,000 was announced by A. Mitchell Palmer, alien property custodian.

Hellenic Chemical and Color Co. Inc. begins suit against Diamond Alkali Co. to recover \$4,200 alleged to be due to them on sale of 700 tons of soda ash.

Why Not A National Tariff Policy?

By Carl R. De Long
of Federal Phosphorus Co., Birmingham, Ala.

WITH the battle lines now being drawn, we will soon be in the midst of another national election campaign. There is much conjecture as to the part the tariff issue will play and whether the chemical industry, along with other lines of business, will be plunged into a major tariff revision in 1929. The answer to this, of course, depends on who wins the race in November.

Both parties in their platforms have pledged themselves to revision of the tariff. The Democrats are committed to a complete revision of the existing act, while the Republicans have declared for the upward revision of rates on certain commodities. If the Democratic party is the winner, there is not question but that we face a tariff revision in 1929. On the other hand, if the Republican party is victorious, it is more than likely that necessary adjustments will be made by means of the Tariff Commission and the flexible provision of the present act.

Newspaper discussion is rife as to whether the tariff will be the dominant issue of the campaign. It is apparent from pronouncements of Chairman Work that the Republican party would like to make the tariff the leading issue. However, the Democratic tariff plank has taken much of the wind out of the Republican tariff sails. The former party has come out as strongly for the protective tariff principle as its past history and policies will permit.

What this country needs more than anything else is a unified and well defined national tariff policy,—one which will not be disturbed by the political fortunes of the two major parties. Apparently, we are on the threshold of a political situation which makes such a policy possible and which should result in the tariff being eventually removed from politics.



Emanating from the industry's leading authority on tariff affairs, the clear and concise thoughts set forth by Mr. De Long suggest a sane remedy for existing conditions.

We have witnessed many efforts to eliminate the peaks and valleys in the cycle of American business. There may be mentioned the Federal Reserve System, the Farm Loan Act, and the efforts of Mr. Hoover, in the Department of Commerce, to provide business with adequate information with which it may steer a straighter course. However, little attention has been paid to ways and means of removing the uncertainty which exists when American industry is threatened with, or is in the throes of, a tariff revision. A national tariff policy with the proper machinery to administer it would be another great stabilizing influence in American business.

The change which is taking place in the attitude of the Democratic party towards the tariff makes a national tariff possible. This change is being forced largely by the industrialization, and the diversification, of agriculture in the South, the stronghold of the Democratic party. It has been my observation that, as soon as a Democrat has something to protect,

he becomes an advocate of the protective policy.

The idea of a uniform tariff policy may not be to the liking of the politicians of either party, as it would do away with a lot of political thunder. However, there is no more reason why customs duties should be a political issue than freight rates. Yet, as far as I know, no national political campaigns have been fought on the basis of high or low freight rates. Of course, such an issue is not outside the realm of political possibility.

To have a national tariff policy, there must be fairly close agreement on the subject by both parties and all sections of the country. There is no wide gulf between the Republican policy expressed in the flexible provisions of the Tariff act of 1922 and in the

Democratic tariff plank. The political situation is, therefore, favorable to the development of a uniform tariff making formula.

Such a policy must of necessity be one of moderation. It cannot be one patterned after the reactionary Republican idea of "give them anything they want", or after the reactionary Democratic and political economists idea of free trade. So long as we maintain a standard of living above that of competing foreign countries, we must protect ourselves with import duties equal to such differences. No American industry requires more protection than is necessary to place them on a price equality with their foreign competitors in the domestic market. Most consumers prefer domestic sources of supplies at equal prices. The reliability of supply, promptness of delivery, and easier adjustment of differences as to quality are advantages to domestic producers that cannot be measured quantitatively. A comparison of costs of production or prices as a means of determining tariff duties still leaves the domestic producer at an advantage. My contact with the tariff problems of the chemical industry has shown that practically all domestic manufacturers are willing to accept this basis of determining tariff duties.

Duties Under Prior Tariff Acts

However, they are at times reluctant to see this policy applied to some other commodities which they have to buy. If a policy of tariff protection is justified, it should be applied uniformly to all industry without discrimination or favor. This can only be done by a

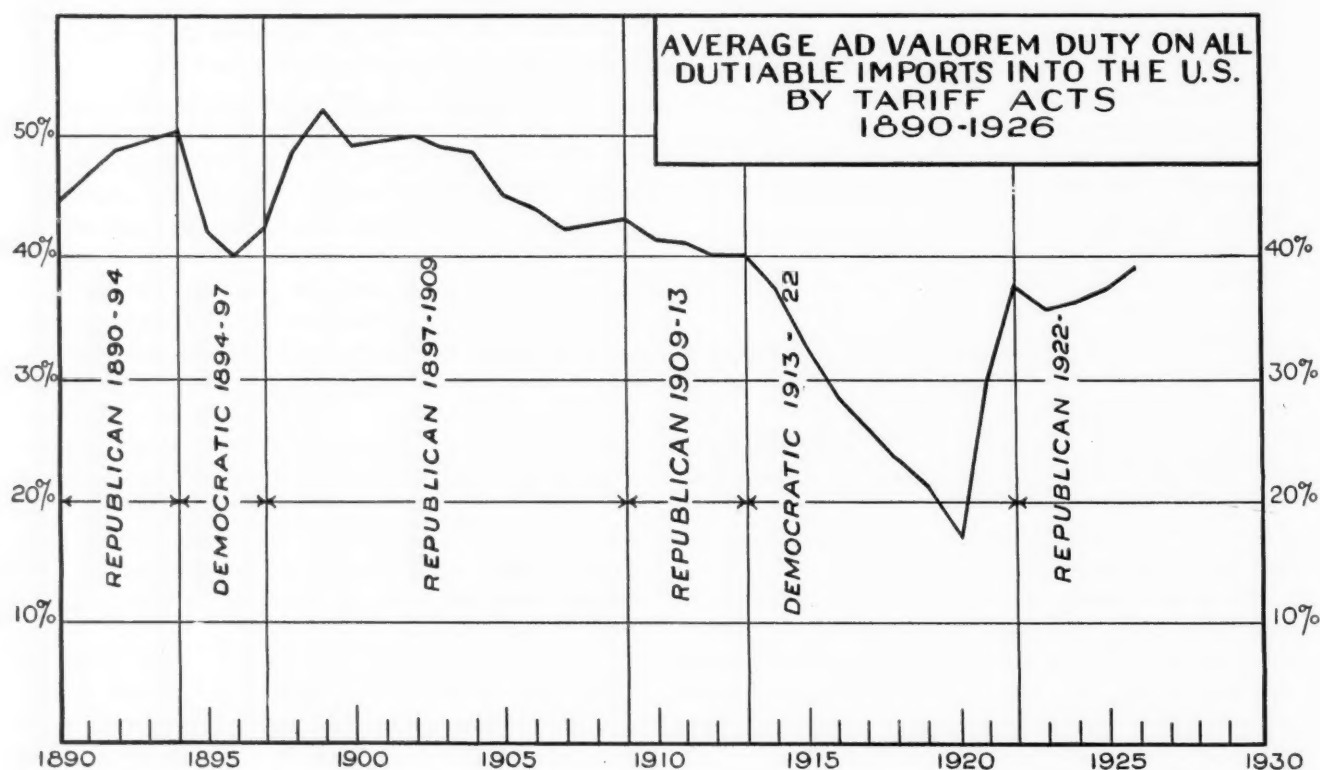
non-partisan judicial body acting independently of political influence.

In considering the possibility of a national tariff policy, a glance at the average duties levied under past tariff acts may throw some light on the feasibility of a policy based on the protective principle. The United States has never been a free trade country. Even under Democratic administration, the duties levied on the basis of tariff for revenue have afforded a considerable degree of protection. Unfortunately, we do not have a statistical record free from other influences to measure the difference in duties assessed under the different administrations. The accompanying chart shows the average ad valorem duty on all dutiable imports under the various tariff acts from 1890 to 1926.

Plan Is Feasible

During this period, we had four Republican acts as against two Democratic acts. The last Democratic act was in force during the period of the World War, and the subsequent period of inflation. The average ad valorem duties during this period are therefore abnormally low, due to the effect of high prices on specific duties. There is no question but that duties have been lower under Democratic, rather than under Republican, administrations. Yet this difference has not been as great as the practical politician would have us believe. The difference is about in the ratio of 40 to 50 or 30 to 40.

An analysis of past duties, therefore, does not discourage the idea of a national tariff policy. In fact, it shows that it is entirely possible.



Advertising

as an aid to

Distribution

By Frances M. Suarez
of Philadelphia Quartz Company

DISTRIBUTION and its cost is claiming these days the primary attention of all manufacturers. The articles on this subject published in *CHEMICAL MARKETS* have been thought-provocative, and indicate that the chemical distributor is alive to the situation.

In considering the chemical distribution problem, we'll start with the buyer. It is certain that the buyer of less than carloads of chemicals must not be penalized unduly because of the limitations of his requirements. On the contrary, he should be given an opportunity to purchase at a fair price delivery service for his smaller needs equivalent to that which the carload buyer receives. In other words, delivery at his plant. Very often, however, because of small scale production or use, hand to mouth buying calls for extraordinary deliveries for less carload lots.

There is little question but that the distributor who handles many allied chemical products, can perform this service more economically than can the respective manufacturers directly. He fills the big need to-day of keeping down the cost of distributing goods in less carlots. The distributor is an economic factor in contacting and supplying the less than carload user and like any other useful service deserves a fair return from his sales.

Price cutting seems the line of least resistance to get the business, not only to distributor, but many times to the manufacturer. Eventually, however, either quality or service will be sacrificed. The buyer soon realizes that quality and cheap prices seldom are combined in the same product, as is illustrated by the story of two youngsters who had lemonade stands in the same block. "One advertised at two cents a glass and the other at

five cents a glass. A man, after drinking a couple of glasses of the cup-price lemonade, asked the lad in charge of the other stand: 'How can you sell lemonade at five cents when your competitor sells as fine lemonade as I ever tasted at two cents?' 'Well, mister' answered the boy, 'we're partners. The cat fell in his bowl an hour ago and we decided to get rid of that lemonade before the news spread!'" Unless the distributor provides for his various items of cost as outlined so ably by Mr. G. S. Robins' recent article, red will show on the wrong side of the ledger, or else a cat has fallen into the lemonade!

The price cutting evil need not hang threateningly over the chemical distributor's head, if he will consider the potential benefits of well planned advertising. Perhaps the chemical distributor has failed to use to the utmost the power of advertising, to help him to make new friends and to keep the old ones. Advertising can be used also to create among buyers a consciousness of the inherent value and importance of the chemical distributor to modern industry.

Advertising is a sales aid to the distributor as well as to the manufacturer. The national advertising carried by the manufacturer, of course, helps the distributor considerably but he should capitalize on such publicity for the product he handles. Niagara had the same volume and power centuries ago, but until it was harnessed, utilized by hydro-electric plants, it turned no dynamos. Distributors should know where the manufacturer advertises, when and what, in cases of diversified products or uses. Every magazine has facilities for furnishing at a nominal price, proofs or reprints of the advertising it carries. A manufacturer who sends his corps of distributors proofs of his advertisements deserves to have



Some of the attractive containers used by Philadelphia Quartz Company for packing silicate of soda.

them carefully scrutinized. These proofs can be a source of education as to new uses of the manufacturer's product and new sales angles. The office personnel and the salesmen need to have the information contained in this advertising, and adapt it to their selling program. Then the house organs of the chemical manufacturers usually furnish a fund of ideas on the technical sales aspects of their products. For instance, Silicate "P's & Q's" published by the Philadelphia Quartz Company of Philadelphia is well known throughout the chemical industry and enjoys the reputation of an interesting authentic paper on silicates of soda and their various uses in industry. Chemical manufacturers, authorities in the production of their respective merchandise, are constant contributors of technical articles to the trade papers. The jobber could procure reprints and distribute them to classified lists of prospective users or potential customers. So like Niagara, the advertising power furnished by the manufacturer must be utilized by the distributor in his selling efforts.

Direct Mail Advertising

Direct mail advertising pays the distributor. "Who shall I say wants to see him?" is a question never asked about a mailing, says an S. D. Warren Company advertisement. A salesman doesn't always get to see his man, or some times his interview is inopportunistically timed. The mail piece directed to the right individual reaches him and your name and message are put across at a leisure moment. When the salesman calls again he has an entree, which was prepared in advance by the printed matter.

Manufacturers often assist their distributors' direct mail efforts by furnishing supplies of envelope stuffers and direct mail literature free of charge or at cost. The purchase of large quantities of printing by the manufacturer makes for economy. How can the distributor use the printed matter to best advantage? The logical method of increasing sales is to obtain new accounts. Therefore, direct mail literature would be more productive of results, if addressed to selected lists by the distributor. Many manufacturers are in a position to furnish suitable lists. Envelope stuffers which tell of new products and new applications, on the other hand, are excellent for use with daily correspondence. Anything that makes it easy for the prospect to reply to the advertising message should be employed. Consequently, the printed reply post card attached to the letter or printed folder is an economical and effective method of getting returns.

Radio broadcasting and skywriting, latest advertising media, are not adaptable to the chemical industry but the wide awake manufacturer loses no opportunity to make use of even the less spectacular and humble—for example, package advertising. The sample package of his product can be a salesman working for the distributor. Attractive labels and

the neatness of the parcel help to put across the integrity and reliability of the principals.

The returnable package system is a bugbear of the chemical industry. We submit that it can be dispelled to a considerable measure by advertising. Educate the buyers by mail to make deposits, to send drums back promptly. Big possibilities are to be had from a series of stuffers, probably along a humorous vein, pointing out the advantages to the buyer in meeting the terms of sale. A drum tagging system which has advertising value to it, is now being tested out. Two color tags are furnished for the distributor to wire to the drums he sells and delivers locally. The tag has the information that the merchandise, mentioning it by trade name, was bought from the distributor and when empty the drum should be returned to him. The expectation is that fewer empties will go astray or be absorbed into the wrong accounts. The constant drip, drip of water is known to wear away the hardest stone, and so advertising can be compared to the drip, drip in so far as the returnable package problem is concerned.

Chemicals and Human Interest

Into the sale of heavy chemicals is being introduced here and there a new and precious factor—human interest. True, facts, cold facts and plenty of them are needed for successful industrial selling, but the bright, arresting spark is produced by the flint—imagination. The plea for humanizing industrial advertising still goes seeking a hearing, although many outstanding successes attest the fact that chemical buyers are not unlike other humans.

Finally, advertising could no more be expected to be the chemical distributor's panacea than it could be for all business. Nevertheless, it is a huge educational force that is ready to be harnessed to raise the standards of buying and selling in the heavy chemical market.

Italian production of ammonium sulfate totaled 61,000 tons in 1926, or almost four times the 1913 figure and more than double 1925 production, Assistant Trade Commissioner E. Humes, Rome, reports to the Department of Commerce.

Increase is to be attributed almost entirely to ammonium sulfate obtained from synthetic ammonia, it is said. Of the 61,000 tons of ammonium sulfate produced in 1926, 44,000 tons were synthetic ammonia sulfate, the balance, 17,000 tons, having been obtained from gas works and coke-oven ammonia, from the gassification of peat and lignite and from the decomposition of calcium cyanamid as follows: From gas-work ammonia, 5,770 tons; coke-oven ammonia, 5,460 tons; from peat and lignite, 4,570 tons; calcium cyanamid, 1,200 tons.

Consumption of sulfate of ammonia in Italy in 1927 has been estimated at 81,400 tons, compared with 65,000 tons in 1926 and 35,000 tons in 1913. The 25 per cent. increase in the use of ammonium sulfate as between 1926 and 1927 is interesting in view of the fact that it is the only fertilizer which registered a gain during 1927.

Italy's domestic ammonium sulfate industry is declared now in a position to supply domestic needs, and imports of sulfate of ammonia declined from 21,641 tons in 1925 to 13,104 tons in 1927.

Chemicals in Canada

Since the World War

By S. J. Cook

*Chief, Mining, Metallurgical and Chemical Branch,
Dominion Bureau of Statistics*

CANADA'S chemical industry contributes in no small measure to the diversification of Canadian manufactures and adds appreciably to the volume of production. If the larger definition of chemical industry be taken as including all industries using chemical processes the field covered represents not less than one-fifth of the aggregate Canadian manufactures.

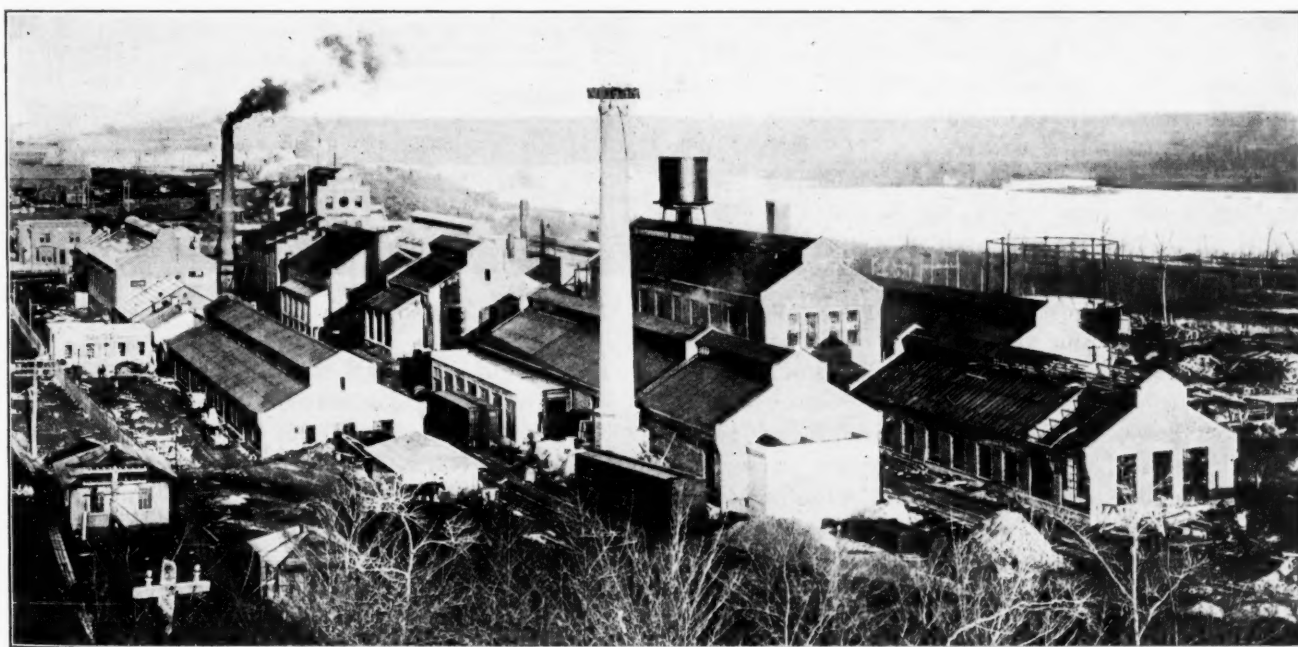
A decade is a comparatively short period in the history of a country, though in a relatively new land, such as Canada, ten years may witness much growth and many advances in the field of industry, and especially in enterprises whose processes involve the application of chemical science.

Ten years ago, the war was still raging; munitions of every kind were in great demand; and the output of shells, explosives, chemicals for war needs, and medicinal preparations to replace those formerly imported, was at its peak. Strain and stress of war conditions, the readily available moneys of war funds, the high nervous tension of the people, all combined

to create an industrial condition never before known in the history of Canada. Imports of chemicals were restricted; exports of munitions completely over-turned the balance of trade in chemical products. To contrast production and trade to-day with those of 1917 is to draw a most unbalanced picture, unless it be borne in mind all the time that the contrast is between actual conditions in a war period in Canada and the vastly different circumstances that, happily, prevail to-day.

Prior to 1914, Canada had developed a gradually increasing export trade in chemical products; in the war years, the exports of chemicals and allied products—mostly explosives,—rose rapidly until, in the years 1916-1918, the values reached totals over ten times greater than the corresponding values in the years immediately preceding the war. In the fiscal year ending March 31, 1917, Canada's exports of chemicals and allied products were valued at \$53,004,223.

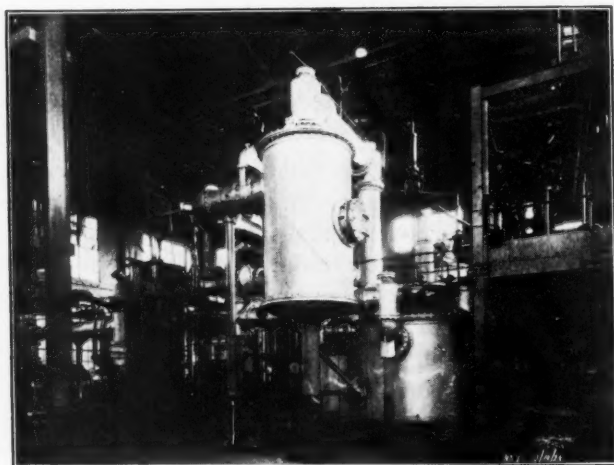
Reaction succeeded the artificial stimulus arising from war needs, and in 1919 there was a decided slump



Plant of Canadian Electro Products Company, Shawinigan Falls, Quebec.

in trade. Then, in an effort to recover something of their war-time status, industry and commerce advanced to new levels in 1920; but the boom was short-lived; the war-time markets were gone and peace-time demands were as yet easily supplied from stocks accumulated towards the close of, and immediately after the war.

Beginning in 1922 a more rational advance set in and has continued without interruption up to the present time. Except in the wood distillation industry



Tar extractors and ammonium sulfate apparatus, Hamilton By-Products Coke Co., Ltd., Hamilton, Ontario.

that has suffered from the competition of synthetic products, the chemical industries in Canada have maintained and steadily improved their positions.

Measured in terms of output values the growth of Canada's chemical industries may be observed in the figures for the past seven years. In 1921 the aggregate value of chemicals and allied products made by the 469 plants reporting for that year was \$88,901,547. In the following year production was valued at \$95,944,185. In 1923 the number of concerns was 475 and their total output had a sales value of \$111,244,156. There was a recession of about 3 per cent. from this level in 1924 but in 1925 when 510 firms were producing, sales rose to \$112,906,746. In 1926 the value of products amounted to \$122,589,526, establishing a new high record which was overcome in 1927 when the 560 reporting plants showed an output having a value in the aggregate of \$126,668,773.

It will be noted that the output values given in the preceding paragraph were obtained as the product of the quantities made and the unit values of the commodities produced. Since there are two variables, quantity and price, the resulting figures do not give a true indication of the trend in volume production. Eliminating the variable due to the fluctuating prices, and computing the values for each year in terms of the prices prevailing in 1913, the last year before the war, a new set of figures may be obtained which shows more clearly the growth in the output of chemicals and allied products. The output in 1921 had an actual sales value of \$88,901,547; at 1913

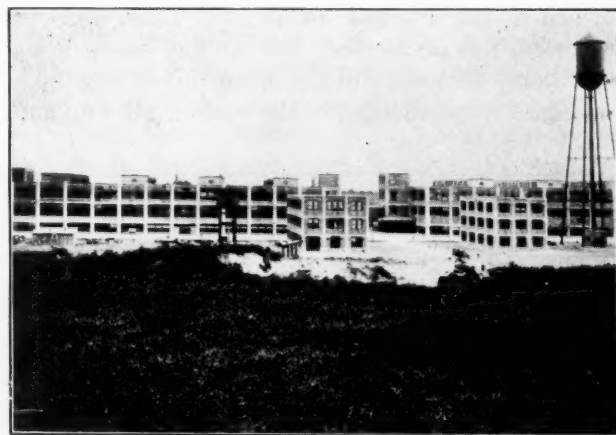
quotations this output would have been worth \$48,140,000. In millions of dollars, which is most convenient for this purpose, the values for each of the ten years, 1918-1927, computed on this basis, were as follows:

Year	Millions of dollars	Year	Millions of dollars
1918.....	180.0	1923.....	67.4
1919.....	53.1	1924.....	67.0
1920.....	55.9	1925.....	71.8
1921.....	48.1	1926.....	77.3
1922.....	57.6	1927.....	82.3

Thus, disregarding 1918, the last war year, it will be seen that, except in 1921, there has been a steady growth in the volume of production of chemicals and allied products in Canada year by year since the war.

A study of Canada's chemical statistics shows that sales in 1927 were higher in every industrial group, save one, than in 1926. Similar progress was reported in 1926 and 1925, so that the production of chemicals in Canada seems now to be a well-established industry in which normal and very satisfactory improvement may be observed each year.

Summarizing the situation as it is reflected in the statistics of production in Canada, imports and exports, it may be noted that in each of these three divisions of the trade, the total values recorded in 1927 were higher than in the preceding year. Production and imports values have both shown improvement in each of the three years; in the same period, exports valuations provided one exception when, in 1926, the aggregate value was less than in 1925.



Plant of Canadian Celanese, Ltd., at Drummondville, Quebec.

Imports of chemicals and allied products into Canada in the calendar year 1927 reached a value of \$33,313,500 as against \$31,358,384 in the preceding year and \$27,653,819 in 1925. Exports of similar products in 1927 amounted to \$17,854,915 in value as compared with a total of \$16,487,522 in 1926 and \$17,400,000 in 1925.

Canada's import trade in chemicals from the United States has advanced about two million dollars a year in each of the past three years. Import trade from Great Britain, on the other hand, has not changed

either way very much during these years, although in 1926 there was a marked gain in the value of imports from this source. Figures for 1927 were lower and not much changed from those of 1925. Canadian purchases of drugs and chemicals from countries other than the United States and Great Britain have grown year by year since 1924.

Exports of chemicals from Canada in 1927 were about equally divided, in point of value, between the United States and other countries, including Great Britain. Canada's exports in 1927 to United States, Great Britain, and to other countries, were, in each case, greater in value than the preceding year.

Computed as the sum of production and imports for chemicals and allied products, less the value of similar articles exported, the apparent consumption of chemicals in Canada in 1927 reached a total of \$142,127,358, or 4.67 million dollars more than the corresponding figure for 1926. In this computation there have been included only those products that are

generally recognized as coming under the industrial classification of chemicals and allied products.

Producers in this class in Canada numbered 560 in 1927, divided as follows: Coal Tar and its Products, 16; Acids, Alkalies, Salts and Compressed Gases, 41; Explosives, Ammunition, Fireworks and Matches, 16; Fertilizers, 12; Medicinal and Pharmaceutical Preparations, 135; Paints, Pigments and Varnishes, 62; Soaps, Washing Compounds and Toilet Preparations, 111; Inks, Dyes and Colours, 28; Wood Distillates and Extracts, 11; Miscellaneous Chemical Industries, 128.

Investment in plant and equipment used by these 560 concerns amounted to nearly \$135,000,000 in 1927, making a gain of more than a million dollars in this item.

Employment in 1927 in these industries showed improvement both in the number of workers and in the payment of salaries and wages. The 14,405

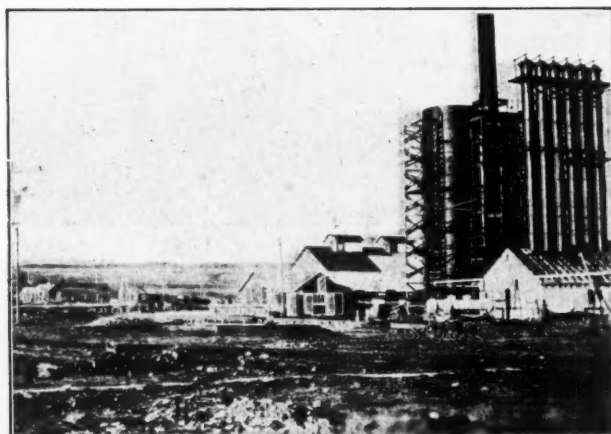
SUMMARY STATISTICS OF CHEMICAL INDUSTRIES IN CANADA, 1926

	No. of plants	Capital employed	No. of employees	Salaries and wages	Cost of materials	Selling value of products	Value added by manu- facturing
		\$		\$	\$	\$	\$
Chemicals and Allied Products:							
Coal Tar and its Products.....	15	4,147,163	183	257,305	1,859,879	3,088,053	1,228,174
Acids, Alkalies, Salts and Compressed Gases	43	38,389,663	2,400	3,597,473	13,360,268	30,322,322	16,872,054
Explosives, Ammunition, Fireworks and Matches.....	14	16,857,120	2,109	2,243,455	6,827,317	12,155,220	5,327,903
Fertilizers.....	12	1,891,054	221	210,427	1,047,641	1,449,589	401,948
Medicinal and Pharmaceutical Preparations..	130	17,194,519	2,365	2,875,677	5,552,699	15,382,475	9,829,776
Paints, Pigments and Varnishes.....	64	22,890,807	2,484	3,375,961	13,105,367	24,803,237	11,697,870
Soaps, Washing Compounds and Toilet Prep- arations.....	108	17,351,378	2,068	2,589,460	10,959,995	19,072,528	8,112,533
Inks, Dyes and Colours.....	27	2,729,166	441	728,273	1,069,957	2,819,945	1,749,988
Wood Distillates and Extracts.....	9	2,217,049	255	214,694	827,575	1,734,993	907,418
Miscellaneous Chemical Industries.....	134	9,739,972	1,819	2,216,652	5,513,884	11,851,164	6,337,280
Total Chemicals and Allied Products.....	556	133,407,891	14,345	18,309,377	60,124,582	122,589,526	62,464,944
Other Industries Using Chemical Processes:							
Malt.....	5	3,470,215	175	283,115	2,105,700	3,943,101	1,837,401
Brewery Products.....	63	53,893,942	3,946	5,733,569	14,448,510	43,602,960	29,154,450
Tallow and Animal Oils.....	6	754,214	111	137,880	329,303	525,120	195,817
Textiles—Dyed, Cleaned and Finished....	350	17,278,327	8,972	8,225,691	2,104,176	17,642,268	15,538,092
Pulp and Paper.....	115	501,184,714	31,279	44,175,502	85,365,465	215,370,274	130,004,809
Wood, Creosoted or Otherwise Preserved..	10			(Only 2 operating companies)			
Coke.....	6	24,769,899	615	1,013,752	9,744,081	15,261,474	5,517,393
Illuminating and Fuel Gas.....	44	54,273,267	3,678	4,883,521	6,226,100	18,264,860	12,038,760
Distilled Liquors.....	15	26,422,006	1,015	1,287,122	3,676,197	12,216,906	8,540,709
Wines and Grape Juice.....	27	3,678,458	204	294,820	1,349,787	2,485,136	1,135,349
Linseed Oil and Oil Cake.....	8	2,691,550	231	282,632	5,364,364	6,486,924	1,122,560
Rubber Footwear and Rubber Goods.....	39	62,661,702	13,587	14,708,023	49,902,189	86,508,137	36,605,948
Starch and Glucose.....	3	4,964,775	511	638,408	3,199,003	4,988,860	1,789,857
Refined Sugar.....	8	49,748,404	2,916	3,968,140	48,848,507	64,270,687	15,422,180
Tanned Leather.....	108	29,348,291	3,924	4,299,870	18,869,383	27,747,605	8,878,222
Glass.....	52	11,432,823	3,033	3,443,644	4,884,559	11,670,269	6,785,710
Petroleum Products.....	23	57,178,125	3,753	5,892,399	51,172,159	71,196,311	20,024,152
Artificial Ice.....	27	4,653,742	278	418,404	89,825	1,309,779	1,219,954
Total Other Industries Using Chemical Processes.....	899	908,404,454	78,228	99,686,492	307,679,308	603,490,671	295,811,363
GRAND TOTAL—All Industries.....	1,455	1,041,812,345	92,573	117,995,869	367,803,890	726,080,197	358,276,307

employees in these industries earned \$18,585,897 during the year.

Prices of chemicals and allied products in Canada as reflected by the Bureau's index number, (average prices in 1913 equals 100) showed a decline during 1927 to an average of 153.8 as against 157.8 in 1926. In January the index stood at 155.7, and in February, March and April, at 155.4, thereafter declining gradually to 151.3 in November and December. This means that chemical prices in Canada as reflected in the fluctuations of prices observed in the variety of commodities used in making up the index were 53.8 per cent. higher in 1927 than in 1913 but 4 points lower or approximately 3 per cent. less than the average for the preceding year.

In the export field, electrochemical products led the list. Cyanamide and calcium carbide were the two largest items in the group, and the export of acetic



"Scrubbing" plant of Canadian Western Natural Gas Co., erected at cost of \$300,000, located in Turner Valley, southwest of Calgary.

acid, much of which is produced from carbide, has also increased in recent years. Canada's other chemical exports of importance include soda ash, cobalt oxides and salts, ammonium sulfate, paints, pigments and varnishes, medicinal and pharmaceutical preparations, soaps (more particularly toilet soaps) and sulphuric acid.

Ontario Leads in Chemicals

In the field of chemicals and allied products Ontario was easily the leading province with 297 of the 560 plants located within its boundaries; these plants represented an investment of \$72,729,899, or more than one-half the total investment in all plants in Canada. Production from Ontario's plants had a value of \$73,959,168; employees numbered 7,739 and wages totalled \$10,471,740. Quebec was next with 71 plants in which there was invested \$47,859,271. Production was valued at \$39,307,213 and the 5,290 employees earned \$6,414,728. British Columbia reported having 32 plants in this group. Capital employed amounted to \$5,888,497, and production values reached \$5,156,665. Manitoba had 31 plants in which the investment amounted to \$4,636,117 and production \$4,614,-

198. Nova Scotia, Alberta, New Brunswick, and Saskatchewan followed in the order named.

In addition to the industries referred to above there are a great many other plants using chemical processes, chief among which may be mentioned manufacturers of pulp and paper; makers of rubber footwear, automobile tires, and other rubber goods; the refining of sugar; the brewing industry; the tanning of leather; the manufacture of illuminating gas; the dyeing, cleaning and finishing of textiles; the by-product coking of coal; and the manufacture of glass.

If all these industries be included under the term "Chemical Industries" there are approximately 1,500 such plants in Canada representing an investment in plant and equipment of well over a billion dollars, employing upwards of 90,000 men, paying about 120 million dollars annually in wages and salaries, and producing commodities having a factory value of more than 725 million dollars yearly. Chemical processes in Canada are of great importance in the commercial life of the nation.

U. S. Creosote Consumption Increases

Increasing amounts of coal tar creosote are consumed annually in the United States and despite an expanded domestic production, it is being imported from other producing countries. In 1927 the domestic production was reported to be 76,395,325 gallons with a value of \$9,847,932, an increase over the 1926 output when 75,495,540 gallons valued at \$9,767,537 were produced. Imports in 1927 totaled 95,915,221 gallons with a value of \$15,381,494, an increase of almost 10 per cent. over the 1926 imports when 87,518,544 gallons were entered for consumption valued at \$11,720,397. In the table given below will be seen imports of creosote oil during the first quarter of 1928.

Imports of Dead or Creosote Oil into the United States

Country	January	
	Gallons	Value
Belgium.....	2,825,631	\$497,427
Netherlands.....	1,706,583	283,326
Germany.....	.....	.....
United Kingdom.....	5,791,200	980,880
Canada.....	75,373	8,782
Japan.....	.....	.....
Country	February	
	Gallons	Value
Belgium.....	1,422,924	\$259,329
Netherlands.....	2,483,736	392,301
Germany.....	1,158,661	212,711
United Kingdom.....	1,111,416	191,720
Canada.....	154,614	21,181
Japan.....	408,060	34,209
Country	March	
	Gallons	Value
Belgium.....	1,644,324	\$286,272
Netherlands.....	1,110,905	203,284
Germany.....	.....	.....
United Kingdom.....	4,184,157	651,354
Canada.....	113,754	15,265
Japan.....	225,564	40,602

Firms interested in imports of coal tar creosote should subscribe to Statistical Statement I-8002, wherein will be found each month imports of this commodity in quantity and value and the country of origin. This service is available at the nominal rate of \$1 per year and subscriptions may be sent to the nearest District or Co-operative Office of the Bureau of Foreign and Domestic Commerce.

Should Barium Chloride Sell at Higher Levels?

Based on the contention that the barium chloride market has long been at the mercy of importers, a domestic manufacturer has been successful in instigating a cost of production investigation by the Tariff Commission with a view to increasing the rate of duty.

THE barium chloride market is again coming to the front as the battle-field between domestic and foreign producers. With the announcement of the Tariff Commission that it is about to begin a cost-of-production investigation with a view to increasing the tariff, interest is again centered upon this market and the struggle being waged for its control.

Previous to the adoption of the Tariff Act of 1922, barium chloride was dutiable at $\frac{1}{4}$ c pound. When that act became law, the duty was increased to $1\frac{1}{4}$ c pound, or \$25 a ton. In 1923, according to the Bureau of Census, Department of Commerce, there were six domestic producers, in 1925 there were four, to-day there are two. Two or three years ago, one of the two applied for relief but was refused an investigation. Since that time, the struggle has become more intense and has fast been resolving itself into the survival of the fittest. The two domestic producers decided to fight it out, and meet imported prices. They have been doing that with considerable success but both claim that they have been losing considerable money in the effort. Undoubtedly, that is what has prompted this further application for relief. The market is a small one, consuming, it is estimated a maximum of 6,000 tons a year, and either domestic producer could doubtless supply sufficient quantities to care for domestic requirements. That in itself is in a large part responsible for the weak conditions which have prevailed in this market over a long period of years—the market can't support both domestic and foreign producers. It isn't large enough and from present indications shows no sign of increasing in size. Dry color makers are the only prominent users and the size of that industry is established upon quite a definite basis already.

A study of the import figures since 1921 is of interest in tracing the progress of the struggle for market control. In 1921, when the tariff was \$5 a ton, 2,186 tons, valued at \$72,621 were imported. In September, 1922, the Tariff Act became law, and the tariff was increased to \$25 a ton. During that year, 1,962 tons, valued at \$112,785 were imported. In the

following year, 1923, foreign producers were evidently discouraged by the tariff for importations fell to the lowest point of the period under discussion, amounting to only 1,278 tons, valued at \$75,014. But, whether through over-confidence on the part of domestic producers behind the tariff wall or improved production methods on the part of foreign manufacturers, the next year saw a strong come-back. In that year, 1924, the previous year's imports were almost doubled and amounted to 2,330 tons, valued at \$100,810, while imports in 1925 were almost as large, amounting to 2,167 tons, valued at \$67,306. Since that time there has been a gradual decline in the quantity imported. Domestic producers began to tighten their belts and settle down to the problem of meeting foreign competition. As a result imports in 1926 amounted to only 1,773 tons, valued at \$49,426; while those in 1927 showed a further decline, amounting to 1,577 tons, valued at \$45,285. Figures for the current year are available through May and show a further decline when compared with those of the corresponding period of last year. Imports for the first five months of this year amounted to 668 tons, valued at \$14,360, which compares with 910 tons, valued at \$27,571 for the corresponding period of last year. Pro rata, this would indicate total imports for 1928 of only 1,158 tons, while as a matter of fact, they will in all probability be even smaller, judging by present indications. However, it is probably safe to assert that imports for 1928 will for the first time fall below the 1,278 tons imported in 1923, the first year of the \$25 ton tariff.

That the imported material is definitely falling off is attested by importers themselves, who complain bitterly of the tactics of domestic producers who are forcing them slowly but surely out of the market. The margin is so slim at present, that the only places imported material can meet domestic competition as at a certain few Coast ports, such as New Orleans, Baltimore, Philadelphia, New York and Boston. By selling ex dock at these places, importers can still offer a limited degree of competition. But the slightest freight charge to inland points throws them definitely out of competition, so slim a margin is left to them

after paying the tariff, ocean freight and incidental charges. Thus, despite considerably lower costs of production abroad, foreign producers are leaving this market for others more profitable elsewhere.

Domestic producers, on the other hand, claim that foreign producers have brought this on themselves by consistently selling under the market in 1924 and 1925. Domestic producers state that they have been selling at a loss for over four years in an effort to meet competition and point to their costs of production to prove this and substantiate their applications for higher tariff. The three chief raw materials for the production of barium chloride are black ash, coal, and calcium chloride. To take the latter item alone, at about \$20 a ton, and approximately two tons per ton of barium chloride, domestic producers say that already their cost is in the neighborhood of \$40 a ton. When all the other factors such as labor costs, upkeep, overhead and a reasonable profit, are figured in, the domestic manufacturers claim that about \$85 ton should prevail as a reasonable market price.

The Market Position To-day

The market price of barium chloride to-day is \$57 @ \$65 ton. After being chronically weak for over two years and reaching a new low of \$54 in June, the market has been gaining in strength during the last two months and is now showing an upward tendency. The explanation doubtless lies in the fact that less imported material is available due to the fact that importers have found it unprofitable to bring in at the prices established by domestic producers, and foreign manufacturers have turned to more profitable markets. One of the largest German producers reports that he is sold out for three months ahead at prices equivalent to about \$35 ton in United States currency. Importers report similar information from their principals. Temporarily, at least, the victory lies with the domestic manufacturers. It has apparently been a costly one, as evidenced by the application for an increase in duty which has just been made by one of the two producers. With the tariff as at present established, the importer is always a threat, for he can divert his material to these shores whenever the price advances to the point at which he can do so profitably. If on the basis of this new cost-of-production investigation, the Tariff Commission decides that a further increase in tariff is justifiable, the foreign producer will be removed from the domestic market entirely. The struggle thus far has, in general, produced favorable conditions for the consumer and he will watch with keen interest its further progress.

Nitrogen Syndicate, Berlin, announced a new schedule of prices on June 27, for deliveries to be made during the next fiscal year, according to a cable from Commercial Attache F. W. Allport, Berlin. The new schedule which has been anxiously awaited by Chilean producers and synthetic producers throughout the world, shows only minor changes from the schedule in effect for the fertilizer year ended June 30, 1928.

Who's Who In Chemical Industry

Brand, Charles J., executive secretary and treasurer, The National Fertilizer Association. Born, Lac-qui-Parle Co., Minnesota, 1879; educat., Univ. Minn. 1902, held Univ. scholarship in botany, 1901-02. Field Museum Natural Hist., Chicago, asst. curator econ. botany, 1902-03; Bur. Plant Ind., U. S. D. A., Washington, from sci. asst. to physiologist, 1903-09; in chg. clover and alfalfa research, pub. discoveries in 1910; in chg. paper investigations, 1909-19, making paper from waste raw materials; in chg. cotton handling and market invest., 1912-13. U. S. Bur. Markets, organ. & chief, 1913-19, started work on market surveys, rural organization, transport and storage, cotton standardization, commodity invest., Fed. market news services, etc. Asst. in and supervised drafting of U. S. cotton futures, grain stds. warehouse, std. container, food products inspection and other acts; as memb. War Emergency Agri. Conf., St. Louis, 1917, prep. foundation draft of Food Control Act. Directed wartime activities; in connection with U. S. War Ind. Bd., was chmn. Com. on Cotton Distribution; memb. Wood Adv. Com. Jt. Com. on Cotton Compression, and rep. Sec. of Agri. on first price fixing com. Coun. Nat. Defense. Vice-pres. & gen. mgr. Amer. Fruit Growers Inc., Pittsburgh, 1919-22. Consltg. specialist in marketing to Sec. Agri., 1922, and chief Econ. Sect. Packers & Stockyards Admin.; Agri. Commr. to Europe, 1923; del. to Internat. Cong. Chamb. Commerce; memb., 1922, spec. com. on Trade Assns. of Chamb. Com. U. S.; del. to 1st & 2nd Pan-Amer. Finan. Conf., and 2nd Pan-Amer. Sci. Cong. Author of many papers on agricultural and economic subject. Memb. Amer. Econ. Assn., Wash. Acad. Sci., Sigma Xi, National Grange, past memb. Bur. Person. Research, Carnegie Inst. Tech., (Pittsburgh), Pres. Harding's Agri. Conf., 1922; Pres. Church Clubs: Cosmos, Nat. Press, Chevy Chase (Washington). Hobby: Finding a solution of agricultural problem. Address: 616 Investment Bldg., Washington. D. C.

Helfrich, L. A., assistant production manager, U. S. Industrial Alcohol Company. Born: Pleasantville, N. J., 31 Dec. 1894; educat., Cornell Univ., B. Ch., 1916. Operating chem., Barrett Co., 7 yrs., Nat. Aniline & Chem. Co. Hobby: tennis. Address: U. S. Industrial Alcohol Co., Baltimore, Md.

Holmes, Milton John, sales manager, The Braun Corporation. Born: Eureka, Nev., 1881; mar., Julia Mephram, Reno, Nev., 1907; children, 3 daus. Wood Investment Co., chem.; Tonopah Mining Co., chem.; Tonopah Belmont Mining Co., chem. Memb., Masons, Elks, K. P., Amer. Chem. Soc., Engrs. Club. Hobbies: golf, motoring, fishing, hunting, prospecting. Address: The Braun Corp., 363 New High St., Los Angeles, Calif.

Klein, Samuel, departmental sales manager, The Calco Chemical Company. Born, N. Y. C., 15 Nov. 1890; mar., Myrtle Reichelsheimer, Richmond Hill, L. I., 20 Apr. 1916; children, 2 sons; educat., Coml. High Schl. A Klipstein & Co., lab. asst. 1906-10; Read Holliday & Sons, asst. chg. application lab., 1911-16; Calco Chem. Co., dept. sales mgr. in chg. sales to lake & jobbing trades, 1917 to date. Memb., Paint & Varnish Assn., Salesmen's Assn. Amer. Chemical Ind., Amer. Assn. Textile Colorists & Chems. Clubs: Drug & Chem., Prescott Hill Country (Plainfield, N. J.) Address: Calco Chemical Co., 136 Liberty St., N. Y. C.

Luer, August, president, Alton Barium Products Company. Born: Zellerfeld Em Hartz, Germany, Jan. 1856; mar., Helena Weisert, St. Louis, Mo., 1877; children, 2 sons, 2 daus.; educat., grade schl. Alton Barium Prods. Co., pres.; Luer Bros. Packing Co., pres.; Alton Hotel & Storage Co., pres.; Luer Bldg. Co., pres.; Alton Banking & Trust Co., pres.; Alton Germania Bldg. & Loan Assn., pres. Address: Alton Barium Prods. Co., Alton, Ill.

Sane Purchasing through the medium of Specifications

By F. J. Schlink

American Engineering Standards Committee



SUCCESSFUL specification buying without tests is impossible, and any apparent gains are likely to prove fictitious. A steady and reliable connection with a testing laboratory, or with several testing laboratories, should be established so that the experts may provide not merely a formal statement of chemical composition, strength, or what not, but can also advise in respect to those innumerable items where the skilled judgment of the technician should enter and where danger points need to be guarded against. Unless unusually close and favorable relations exist with the testing laboratory, someone in the purchasing department must provide a semi-technical link between the findings of the laboratory and the decisions of the purchasing agent. The judgment of the competence of a laboratory, and interpretations of its tests, are not clerical matters but points requiring a good deal of broad knowledge about methods of manufacture of goods, the relative importance of various requirements and the methods of conducting the more usual tests. Accordingly, the problem of advising the purchasing agent in the case of close decisions on quality and price should be assigned to one or more engineers or technically trained persons who have the necessary scientific background.

Beware of Unfounded Criticism

Be wary of the supplier who glibly agrees to meet your specifications and then carefully avoids discussing them thereafter, or, on the other hand depreciates their value or picks flaws in them in an irresponsible way. Criticisms of specifications are always to be welcomed but they should be of a responsible kind—the kind that a man is willing to set down in writing, and on which he is willing to risk a loss of business if he is wrong, or wrong-headed.

I have come upon numerous instances of producers who were regularly furnishing goods to customers buying under specifications and yet who resisted the application of specifications by a new purchaser

for reasons best known to themselves. The real reasons rarely come out in discussion. If they do, and are good reasons, the objector will have no hesitancy in furnishing the technical information upon which his opposition is based.

As an indication of the tendency to depreciate the test and specification technique, I quote the following from *Electric Refrigeration News*, April 11, 1928:

"The operation of an electric refrigerator in a New York laboratory gives little indication of the probable performance of another machine bearing the same trade name, probably a different model, installed in a different make of cabinet by an inexperienced dealer in Texas, connected to the lines of a municipal light plant having a fluctuating voltage and used by a colored mammy who discovers that she can cool the kitchen by leaving the refrigerator doors open".

If one were to paraphrase this sentence by reversing practically all of its statements, the truth would be more nearly approximated. It is absurd to content that a machine which is efficient under laboratory conditions will not be more efficient under service conditions than another one whose performance in the laboratory is poor in obvious and measurable ways. It is a poor laboratory that wouldn't study the performance of a machine under the most extreme conditions it may reasonably be expected to encounter.

There are certain contractual questions involved in the use of specifications, in which the practice of the Federal Government, simplified to a considerable extent, can advantageously be followed in asking for tenders and issuing orders. Such, for example, as whether, or not, samples are to be furnished; what is to be done with shipments and at whose expense, in case of rejection; the method of quoting net prices without involved systems of discounts; the necessity for a responsible form of signature on bids; and various items of this kind. Typical condensed requirements

which are not, however, to be taken as a complete solution of the problem applicable to all conditions of industrial purchasing, are given below.

(Letter-head of firm requesting tenders)

Names and addresses of the prospective bidder to be filled in here, on carbon copies of the bid request.

Date:

Written proposals will be received at Co., address for furnishing and delivering free of all charges for transportation and delivery, to (address) the articles, supplies and/or equipment specified below.

..... Co.
By

The undersigned agrees to furnish the above articles at the prices stated, and deliver same within days of receipt of order.

We furthermore guarantee both quality and time of delivery in accordance with the Co.'s bid request and the description and/or specifications hereon, and it is understood and agreed that acceptance and payment will depend upon our meeting the guarantee in all respects.

Date
Signature

(Bidders firm name)

By
Title
P. O. Address

Bidders should observe instructions on reverse of this sheet.

(and on the reverse side of the sheet)

Prices should be stated in the units of quantity, in which the articles are specified, with packing and delivery included. The business address of the bidder should be given after the name, which should be written in the usual business signature. Where the bidder is a firm or corporation, the name of the person writing the firm or corporate name, as well as the capacity in which he signs, must be shown.

Bidders may make any explanations they wish to make by letter attached to proposal, and referred to therein.

Time of proposed delivery will be taken into account in making award and must be stated in days, and indefinite terms, such as "promptly", "without delay", etc., will not be accepted.

All blank spaces on the proposal should be filled out, and the signature must not be omitted.

Articles or supplies purchased under this proposal will be subject to test and inspection by the Co. at the time of delivery unless otherwise specified. Bids on articles of inferior quality are not desired and will not be considered. Samples of articles, only when requested, must accompany proposals, and be referred to therein. Bidders must state brands bid upon, if such brands are different from those specified in the proposal. Articles furnished must be equal to standards prescribed by the Co.,

which reserves the right to determine whether an article meets such requirements.

The terms of payment are based on the quoted price. The price quoted is to be net, no cash discount, f. o. b. locations specified.

The right is reserved to reject the whole or part of any and all bids, as the interests of the Co. may require.

All communications, without exception, in reference to this bid, are to be sent to

The Technique of Purchasing

When a supplier finds the specification method of purchase irksome, his tendency in interviews is normally to get away from such items as tensile strength, thread count, corrosion resistance or durability, and start talking price, or possibly the fine old reputation of his firm. A factor which few appreciate, in its full importance, is that a purchase decision is a function of quality (not reputation) equally with price. What value to buy cheap gasoline if it corrodes the carburetor? Why buy coal of 11,000 B. t. u. at \$5.50 instead of 12,000 B. t. u. at \$6.00? If grades exist, price differences, with some difficulty, can be evaluated in terms of the market. If standard grades do not exist, a specification must be established, and all tenders disregarded which fall below the limits which it sets. Beware of the shift of emphasis from the points selected in your specifications as important and worth paying for, to those the supplier has selected as preferable from his points of view. The talking point method is not limited to Lucky Strikes and to advertising appealing directly to consumers.

In administering purchasing on a scientific basis, it is nearly always necessary to get facts into numerical form. We must learn to think in terms of price per ton-mile, per heat-unit, per unit of oiliness, soapiness, absorbing power, blackness, strength or whatever the service may require. In simple cases, it may be per pound or per gallon but with such an item as liquid soap, obviously, it is only in a minor sense a matter of volume of liquid. More important is the question of how "soapy" the mixture is.

Why Standardization ?

Tests without standards are only an imperfect approach to the very difficult problem of scientific purchasing. It is impossible, in the nature of things, to test everything that is offered, or that one might wish to have offered for a given purpose. There are between 400 and 1,700 different kinds of oil burners, and to subject all these to test would require the full time services not of one man but of several, and by the time they were finished many of the burners would have been re-designed and the work would have to be begun again. The specification enables one to cut away some of the underbrush before beginning the test. Usually, a specification contains some requirements which can be applied by simple inspection, or by very easy tests and a certain large proportion of the

offerings can be rejected without any great trouble or expense. Likewise, the manufacturer who knows that his product will not meet the specification is likely not to submit it, particularly if he is charged with the expense of the test—a possible expedient in the case of very large buyers whose business is very desirable.

Base Specification on Test

The factor of judgment should be in the specifications and not primarily in the tests since the specifications are written, developed and criticized by experts, and since their production and occasional revision exposes them to public discussion and criticism and assures a degree of continuity of treatment impossible in the routine testing or acceptance on personal judgment by a multitude of individuals in the plants or laboratory, of successive products of the same or different kinds. This does not mean that tests should not be used freely, whether specifications are available or not; but tests of what the market offers should be regarded as a necessary forerunner and adjunct to specifications and every effort should be made to crystallize the results into some sort of specification, even if that be only in intelligent and specific buying description, such as those which appear in the Federal supply schedule,—the appended for example.

Item No.	Article	Price	Unit	Time of delivery	Contractor
1355	Stamps, rubber; mounted on wood handles or molding, with air cushion or other elastic base; size and style of type as shown below (20 kinds and sizes shown); with or without border, as ordered; stamps not to exceed six ins. in length; on samples:				
(a)	First line	\$0.09 each		Days (*)	The Blank Co. of Washington.
(b)	Additional lines . . . .	.09 each		(*)	The Blank Co. of Washington.

*It is understood and agreed that orders for rubber stamps, Items 1354 and 1355, will be filled within 10 days from receipt of order, or, when order is designated "special", within 48 hours from receipt thereof, Sundays and holidays excepted.

NOTE—Miscellaneous rubber stamps when furnished on the same order in quantities of two or more for a single office must be inclosed in paper sacks. Each sack must contain all of the stamps for one office and bear the name of the office.

All rubber stamps must be of the best quality of sheet rubber. The cement used must be guaranteed to hold the parts together securely for two years.

The results of all tests, reports of field inspections, controversies in correspondence and by interview, whether in the field or in the laboratory, whether in your own firm or in others with which you have relations, as subsidiaries, and in other ways, should be reviewed and filed under centralized direction. Light often dawns on a difficult problem when a laboratory test is re-examined in the light of the report of a failure of the product in a field, or a discussion by correspondence as to the cause of the breakdown.

When you are prepared to buy under specifications, you must be prepared to reject when the goods do not meet requirements. If you do not do so, you will find suppliers who will constantly skirt the edge of the specification requirement, hoping that if they do fall too far below standard, the buyer can be persuaded to accept the purchase. To accept definitely faulty goods is unfair to the unsuccessful bidders who might also have supplies of sub-standard products and evidently at a lower price than the successful bidder. Not only should rejections be made when called for by the findings of tests and inspections, but the cost of transportation of the rejected shipments should be borne by the supplier. If the supplier habitually fails to meet specifications (and this is not an uncommon occurrence) he should be put upon the list of bidders whose proposals are not considered, at least until such time as he had made a reasonable showing of willingness and ability to meet requirements. It costs money, in delay and services, to reject goods even when shipping costs are stood by the supplier, since new bids must be advertised for and new tests carried out.

Competitive Bidding a Rarity

I have been amazed to find the small degree to which strictly competitive bidding is indulged in. It seems to be the common practice that when a vacuum cleaner or a drum of carbon-tetrachloride is wanted the buyer rings up a potential supplier and has him send up a salesman. If a request for bids on a specified grade of carbon-tetrachloride or typewriter ribbons is sent out, that request will often, on account of its including contractual requirements, such as provisions for rejection, etc., reach a high and responsible officer of the company, whereas your telephonic request for information may be handled by an office boy, or a telephone operator, who may know a great deal less about the product than you do yourself. The *easy* was of buying by having the supplier interview your buyers and thus furnish the information, most of which your men should themselves have before even approaching the market, is an expensive method; expensive to your firm and to consumers as a whole. Sellers make a larger margin of profit on the buyer's ignorance of goods than by any other mechanism of the market. The success of the technique of analysing manufacturing costs by calculation of the costs of ingredients or parts, and of the cost of compounding or assembling, a method which a good many of the most powerful and expert corporations are now using, is sufficient evidence of this fact. The method of obtaining bids by written tender has the advantage moreover that sellers know that they are in competition, and their price quotations are unmistakably affected by that knowledge.

The beginning of specification work in any company should be the adoption of standard names and clear, specific descriptions for each article. This alone avoids numerous mistakes due to intentional or unintentional misunderstandings. In placing orders, it

is well to remember that the order is ordinarily filled by a different person than the one who received it, and all special instructions regarding quality, special selection of goods, method of packing, labelling, etc. are seriously attenuated before the goods are finally delivered.

A typical prespecification designation, a sort of clear statement of what is wanted that will ultimately ripen into a detailed specification as quantities increase and knowledge crystallizes, has already been presented. Standardized designations save time and money on the part of all concerned and clarify the thinking both of the buyer and the seller.

The Scope of the A. E. S. C.

Time does not permit a discussion or organization for setting up specifications. This is a matter on which considerable and growing technique is available. The American Engineering Standards Committee, representing 36 national organizations—industrial, technical, and governmental, engaged in or concerned in an important way with specifications and standards, has in its files, and in its publications for members and others, a great deal of information useful to those who may desire to put purchasing activities on a specification basis. Under the auspices of the A. E. S. C. 350 national organizations are officially co-operating in development of industrial standards, in which work 2100 individuals are carrying on in numerous specialized committees, whose work has resulted in all nationally approved standards, and 164 other projects under way or nearing approval.

The ultimate purpose of standardization is the systematizing and ordering of knowledge about goods. The purchasing agent's problem at best is one of enormous complexity, as wide in its scope as the geographical distribution of the primary sources of supply, and changing constantly with the growth of new industries and new techniques. The specification technique is the means through which this widespread and mobile flux of knowledge can, to some extent, be reduced from chaos to order and brought within the understanding and practical application of a single individual or department.

It is reported at Frankfurt that the Metallgesellschaft and the Metallbank, two important German concerns engaged on a large scale in industry and trade in nonferrous metals with important connections with the chemical industry, have decided to effect a fusion. According to press reports, the merger will be on the basis of 750 marks par of Metallgesellschaft shares being equal to 1,000 marks par of Metallbank shares. On this basis, the Metallbank will have to raise its capital stock by 25,000,000 marks to make it equal to that of the Metallgesellschaft. The merged company will bear the name of Metallgesellschaft.

Treasury Decision of February 20, 1928, providing for allowance of drawback on refined ethylene dibromide produced by Dow Chemical Co., Midland, Mich., from imported crude ethylene dibromide is revoked, further investigation having developed that the operations consist of restoring deteriorated ethylene dibromide to the condition in which it was imported.

Industry's Bookshelf

Applied Economics, by Raymond T. Bye and William H. Hewett, 255 pages, Alfred A. Knopf, Inc.

An attempt to apply economic principles to the problems of economic life is the expressed purpose of this interesting and comprehensive work, according to its sub-title.

In an effort to bring out most clearly the relationship between principles and problems, the time-honored division of economics into consumption, production, exchange and distribution has been departed from somewhat. Two additional divisions are added—economic aspects of government and comprehensive aspects of social policy—and to the casual reader, these are by far the most interesting chapters of the book.

Labor Relations, by Herbert Feis, 170 pages, Adelphi Co.

A private study of labor relations in the Proctor & Gamble Company. A typical sample of what American industry is doing to work out simple means and policies for insuring steady and peaceful advancement of industrial life. A fairly unprejudiced treatise on methods of co-operation between workers and management to the mutual advantages of each class.

General Chemistry, by A. T. Lincoln and G. B. Banks, 681 pages, Prentice-Hall, Inc., \$3.50 net.

A complete text-book designed for students in a first year college course in chemistry. Includes a more extensive discussion of organic chemistry than is usual in such text-books and in other ways seems perhaps a bit advanced for elementary students.

Introduction to Textiles, by A. E. Lewis, 106 pages, Isaac Pitman & Sons, \$1.00 net.

A survey of the different textile fibres and their preparation with brief accounts of the several manufacturing processes. Is neither more nor less than it pretends to be—a text-book for students of textiles or of the textile industry.

Chemical Encyclopedia, by C. T. Kingzett, 807 pages, D. Van Nostrand Co., \$10.00 net.

This is the fourth appearance of this old friend and there is but little to be added to what has already been said about it. The new edition is bigger and better, a complete reference book for scientist or layman.

European export industries are giving attention to Chilean markets as the result of the discovery in Chile of a new process in the nitrate industry which is expected to enable Chile to compete again with synthetic nitrate, the Department of Commerce has been advised by its representatives in London.

Consumption of nitrate of soda in the world will be increased from 1,800,000 tons during the year 1927 to 2,500,000 tons, in accordance with the signed contracts for 1928, it was declared by the Chilean consulate.

Two new plants, utilizing the American Guggenheim method to exploit economically this mineral, cutting expenses 50 per cent. have started fires.

It is rumored in the Madrid Bourse that the Banco Central, the Banco Espanol de Credito, the Banco de Vizcaya, Jose Luis de Oriol, and Hijos de Manuel Rodriguez Acosta have formed a company for the examination of the potash deposits in Puebla de Cazalla, Province of Sevilla, Spain, and that exploitation work is about to be undertaken by Professor Klockmann, a German citizen reports Assistant Commercial Attache Evett D. Hester, Madrid.

Casein—

Its Present Market Position

IT'S a far cry from an Argentine, cow barn to a modern business executive's desk, but this gap is quite easily spanned by casein in the guise of the most recent use which has been discovered for this essential, but heretofore unromantic, chemical raw material of the paper coating and cold water paint industries. It is indeed difficult to visualize beautifully designed pen handles, ink stands, paper weights and letter openers as descendent from an ordinary pail of milk, for, though it is generally known in the industry that casein is unexcelled in this type of plastic work, the realization of this fact by the ordinary layman is usual-

ly preceded by an "I'm from Missouri" attitude.

Because of the growing public interest in plastic materials of all types it was to be assumed that the talk of higher casein prices was in some way precipitated by a growing demand for casein from this field. A canvass of casein importers and domestic producers belies the truth of any such assumption, for all of the leading sellers refuse to become exercised over the possibilities of any greatly increased demand from that quarter in the immediate future.

One very good reason for the higher prices which have prevailed is traceable to the increase in the duty a few years ago under the present Fordney-McCumber Tariff Act. It is estimated that not more than one third of all the casein consumed in this country is produced domestically, so it is obvious that the increase in the import duty had an almost immediate effect on the price. Despite this increase in the duty, imports, principally from the Argentine Republic, have been gradually but steadily increasing since the increased in the duty was put into effect. This is traceable to the inability of domestic manufacturers to keep up to the increasing demand from practically every industry which uses casein. This increase in consumption is particularly noticeable in the wood working industry where casein is used in water resisting glues so successfully that this industry now ranks third in importance, only surpassed by paper coating and cold water paints.

Domestic producers find themselves handicapped in their efforts to keep their end up in meeting these

Combined with the increase in demand, a general shortage of stocks in the principal supplying markets of the world, has forced the price of casein dangerously high. Strangely enough, the sellers here are in sympathy with the buyers' attempts to hold the market at a reasonable level.

increased requirements. From the viewpoint of a continued maximum casein production, the inroads which the manufacture of dry milk has made in the past few years become alarming. In this connection, the muchly discussed "big business" interests are cast in the role of villain. Even the milk industry is not immune to the post war mania for consolidation. It would be well to explain here that the production of powdered milk is accomplished only with the aid of expensive machinery, far beyond the reach of the ordinary dairy. With the above mentioned trend toward consolidation of these smaller interests and the attendant

opening up of more sources of capital it has become not only possible, but desirable for these corporations to invest in the necessary machinery for the manufacture of powdered milk. Because of the fact that powdered milk yields a greater profit than can ever be realized from the sale of casein, dairies will undoubtedly continue to look with favor on an increasing production of powdered milk. Inasmuch as there is only a certain quantity of milk available for production of either powdered milk or casein there is not much doubt as to which will suffer in the long run.

So much the for domestic situation. As concerns our imports which go to make up practically two thirds of the total American consumption, a large proportion of these originate from Argentine. It is true that France has at times been a factor in this market, but assistance from this source can be discounted for the present at least, as Europe has not been far behind this country, proportionately, in the increase of its casein consumption. France has all it can do to care for requirements in a less competitive field than the United States and for this reason is not considered a serious factor here. With the field narrowed down to Argentine a review of conditions in that country may serve to throw some light on the present tight situation.

Argentine has taken its share of the increased European demand since the war and producers there are in somewhat the same boat as American factors on the question of raw material supplies. Increasing consumption without a corresponding stepping up in the raw material supply has always been a fore-

runner of higher costs on the finished products and there is no reason to expect a deviation from the natural trend in the instance of casein.

Talk, in the Argentine, of the formation of an organization to control the selling price of the exported casein is again heard and is probably precipitated by a poor production season. This question has been debated before and nothing definite has come of it as yet, according to sellers on this market. On the surface it appears that such an organization will meet considerable difficulty in formation, for the three largest exporters represented on this market can account for only about thirty per cent. of the Argentine export trade. Even if these latter are successful in lining up a portion of the independent sellers, it would indeed be quite an accomplishment on their part to suppress some of the smaller independents from selling at any figure they choose to similar organizations in this country. Commenting on this proposed organization, the United States Department of Commerce says:

"At a meeting, of casein, producers, held under the auspices of the Sociedad Rural, Senor Duhau pointed out that Argentina produced 75 per cent. of the casein manufactured for export. It appears that the prices for this product are not controlled by the producers, who have suffered from the activities of foreign speculators. Senor Duhau recommended, therefore, that the Argentine producers and sellers form an organization to control the exports of casein and stabilize prices. Furthermore, he said, it would enable them to increase the price and avoid the risk of an elevation of the American tariff barriers. He concluded by stating that American paper manufacturers, who buy most of the casein, are interested in obtaining a stabilization of prices."

Factors Here Favor Organization

Strangely enough, sellers on this market are not adverse to the formation of such an organization. They are in agreement with the coated paper trade that any further increase in price will be extremely embarrassing to this latter industry. The paper manufacturers have experimented with various proposed substitutes, principally starch, but all have proven mediocre at best. However, in this day of synthetic chemicals and substitutes, no product is safe from displacement and the desire on the part of sellers to keep the largest consumers satisfied is not entirely unselfish. As long as the price paid for casein rankles the consumers, they will continue to seek substitutes, and sellers realize that any amicable arrangement to the satisfaction of all concerned is vastly superior to a feeling of dissatisfaction and uncertainty on the buyers part.

It is said that an advance in duty will be recommended before the next session of Congress, but in fairness to all concerned it is difficult to see any advantage to be gained by such a move. This would spell disaster to the coated paper business, and place

an unnecessary burden on the imported goods. Further, the largest domestic manufacturers express themselves as satisfied with the present margin, and state emphatically that they will not countenance any move which would bring about a further increase in the import duty.

Summing up, it would seem that American buyers cannot expect any immediate relief, particularly if adverse conditions are as bad as painted. It remains to be seen how matters shape up with the approach of the height of the Argentine shipping season which should begin late this Fall.

Imports of Casein into the United States

Year	Pounds	Value
1918.....	7,083,976	\$964,766
1919.....	17,076,936	2,009,791
1920.....	21,238,822	2,431,666
1921.....	9,717,238	842,753
1922.....	14,342,498	1,367,828
1923.....	26,489,992	4,409,744
1924.....	17,749,985	1,384,661
1925.....	18,803,816	1,573,335
1926.....	26,628,126	2,851,537
1927.....	24,209,504	3,119,668

The first commercial quantity of fertilizer amounting to 17 tons has been exported to the United States from the new fertilizer plant at Ensenada, Mexico. Several sample shipments were previously sent to the United States and to Japan, reports Consul E. A. Wakefield, Ensenada, Mexico.

Owned and operated by a Mexican corporation, with \$100,000 invested in machinery for the combined fish fertilizer manufactory and fish cannery, this establishment appears to be a well equipped industrial plant. Production has been unavoidably delayed by lack of supplies of the low grades of fish from which fertilizer is manufactured.

Such fish supplies are readily obtainable off the Mexican coast in almost inexhaustible quantities, but inability to obtain experienced fishing crews for the company's vessels has been responsible for scarcity of fertilizer stock supply.

The price of synthetic sodium nitrate remains unchanged until further notice on a basis of 1.23 marks per kilo of nitrogen. Calcium nitrate will be sold at the unchanged price of 1.13 marks per kilo of nitrogen content, but the 100 kilo special bags will be furnished free of charge. The quotations on Nitrophoska I, II, and III remain unchanged.

Conditions of payment like wise remain unchanged. Three months credit are extended on two-thirds of the amount of purchase and a discount of 3 per cent. applies to amounts paid in cash in excess of one-third of the total amount of the bills.

Explosives manufactured in the United States and sold in June 1928 for domestic consumption was 8,420,000 pounds of black blasting powder, 4,708,000 pounds of permissible explosives, and 26,913,000 pounds of high explosives other than permissible, according to the Department of Commerce. When compared with June 1927, these figures represent an increase of 5 per cent. for black powder, a decrease of 4 per cent. for permissible explosives, and a decrease of 3 per cent for other high explosives.

Economic Analysis of a Chemical Industry

Investment by an Trust

By Theodore M. Switz
Investment Research Corporation, Detroit

INVESTMENT trusts are such newcomers to the financial world in America, and their interests and activities so little understood, that there is considerable curiosity about the nature of their operations.

Their primary purpose is to offer the small investor the opportunity to realize a higher than savings bank return on his investment. In addition, they safeguard his principal through the careful selection and wide diversification of their holdings of bonds, preferred stocks, and common stocks. Of these the most important are the common stocks, since they participate to the greatest extent in the growth of the company's earnings, and thus offer better opportunities for increasing the trusts' investment funds.

The field of investments is so wide and complex, and conditions change with such rapidity, that it is very difficult for a small investor to obtain accurate and timely information. A well conducted investment trust, on the other hand, representing as it does the pooled resources of many individuals, not only is able to maintain facilities to carry on broad and painstaking research work, but it must do so in order to achieve its aims of security and high yield. Consequently, we find that to-day some of these trusts are developing economic research organizations which, in the thorough training of their members, breadth of view, and study of many fundamental problems of industry, are gradually becoming in the field of financial economics the worthy counterparts of some of the great industrial scientific research organizations.

The immediate task of a research group of this class is, of course, to direct the investment policy of its associated trust or trusts. Accurate information

The mere reference, in our June editorial columns, to research work in the chemical industry by investment trusts has provoked many inquiries from the trade as to the nature of this work. We have arranged with Dr. Switz for the publication of two articles on the subject, the first and accompanying story serving as a general background and introduction to the subject "Chemical Companies and Investment Trusts -- How Close Co-operation Will Bring Strong and Stable Financial Support" to appear in a subsequent issue.

concerning progressive *companies* whose securities are under consideration must be obtained and analyzed. A prerequisite to any adequate study of an individual company, however, is a very careful analysis of the particular *industry* in which the company is operating. This industry report serves several purposes: it illuminates the economic interrelations which make it possible for the company to make profits and shows how the industry in question is affected by the prosperity or depression of its consuming market and of industry as a whole; second, such a report makes it possible to establish a rough norm and thereby determine which of the companies in the industry are really in the lead and making the best use of their opportunities; and third, it focuses attention on whether a

company is swimming with the tide in a rapidly expanding industry, or trying to hold its own in an industry doomed to economic extinction. It is as important to avoid or get out of a bad investment as it is to get into a good one.

Investment trusts have to become acquainted with such divergent industries as public utilities, railroads, steel, oil, leather, agricultural machinery, tobacco, chain stores, mining, rubber, chemicals, etc. Needless to say, not all industries offer equal opportunities for expansion and increased earning power. Indeed, the Federal Reserve Bank of New York recently classified 381 different companies into 14 major industry groups and showed the aggregate published earnings of each group during the years 1925, 1926, and 1927. Of the 14 groups, the only ones that showed continually increasing earnings during this period, were motors, tobacco, telephone, other public utilities, stores, and "chemicals and drugs."

When it is realized that such industries as motors, tobacco, and public utilities have long been phenomenal for their steady upward trend, it becomes immediately apparent why investment trusts are interested in chemical industries. Despite this rapid and continuous growth, chemical industries have a certain stability due to their character as suppliers of basic raw materials to other manufacturing industries.

To the general public, most chemicals seem a highly speculative investment, and probably with reason, for in addition to the usual problems of management and finance, manufacture and distribution, they have a host of others all their own. Even a stable progressive company in this field may find the market for its chief product wiped out or an important by-product become valueless almost overnight because of competition from either a newly synthesized compound or some rival with a new process and cheaper raw materials.

Consequently, investment trusts must know what sections of the chemical industry are growing the most rapidly, what new industries may be expected to spring up, and especially what developments are likely to threaten industries which are prosperous at present.

Comprehensive Study Necessary

In order to answer these questions, the research group makes a comprehensive industrial study of approximately 100 pages in length. Beginning with a brief description of the origin and previous development of the industry, the intention is chiefly to point out its approximate age, whether it is old and stable, or whether it is based on some new demand or recent invention. It is possible to call attention in this very general way to previous periods of unusual prosperity or depression such as the dramatic rise of the American sulfur industry to a position of world dominance during the period 1903-1917. Aside from this brief history, emphasis is not on the past behaviour of the industry at all, but on the present and future, the whole tenor of the report being analytical rather than descriptive. Although the questions, "what is the situation in the industry to-day?" and "What will it be during each of the next five years?" must be answered, the very heart of the matter from the investment viewpoint is, of course, "How much profit will be earned?" In the solution of this query an appreciation of the present size and importance of the industry under consideration is desirable. For although the average director or trustee has a fairly good relative idea of the size of say the railroad equipment industry, the mail-order houses, or the oil industry, he usually has little notion of whether the fertilizer, the dye or the alkali industry does fifty million or five hundred million dollars worth of business per year. Comparisons of the size of the industry being studied, with the size of some more familiar industry, can often be made by using the statistics of the biennial Census of Manufacturers. In this phase of the discussion dif-

ferentiation is made between the importance of an industry like the sulfur industry, for example, which furnishes a basic raw material to the sulfuric acid and wood pulp industries, both of which in turn are of fundamental importance in the country's economic structure, and an industry that makes specialties on a smaller scale, like rubber accelerators, or plasticizers.

The discussion so far has laid the foundation for the more detailed analysis. By briefly describing the products and by-products which are manufactured by the industry, it is possible to characterize them so clearly that the layman can recognize them as something more than a jumble of names.

A Non-Technical Description

In studying a chemical industry from the investment viewpoint it is desirable to give as non-technical a description of the manufacturing process as possible, but nevertheless it should be very clearly stated because efficient manufacturing is of more than usual importance in determining the profits of a chemical company. Is the process old and stable like the chamber process for sulfuric acid, or new like the catalytic synthesis of methanol? Is it continuous or intermittent? Does it require large capital expenditures for plant and equipment? Is much labor needed? Are by-products fully utilized or are there waste products? Is the process highly efficient, or does it seem to offer opportunities for improvement? Is it well protected by patents? All such questions and many more pertain to the industry as it is to-day. But it is also necessary to consider developments that may materialize within the next five years. An investigation of the scientific journals and of the patent literature will usually suggest the lines in which any progress will take place, and also show any developments that may effect the industry unfavorably.

Raw Materials a Problem

Raw materials are almost invariably one of the most important problems of a chemical industry. Investors want to know the sources of the present raw materials, and whether the supply is likely to be adequate for sometime to come. For instance, in the case of alcohol manufacture, although many products may serve as raw materials, blackstrap molasses is used almost exclusively because of its cheapness and availability. It is therefore necessary to find out what is done with the molasses produced at present; how much is used for alcohol, how much for stock feed, how much for yeast, how much shipped to Europe. Then the rate of growth of sugar consumption must be studied, so that the quantity of molasses that will be available five years hence may be estimated. By comparing this with the estimated production of alcohol for the period, it is possible to find out whether supplies of molasses will be ample, deficient, or normal. The possibility of supplies coming from elsewhere than the Caribbean must be considered. In the case of a raw material like sulfur a report should discuss the

estimated life of the present deposits, as well as the availability of pyrites supplies in Spain and the United States.

In analyzing a report on a chemical industry, thorough understanding of the uses and markets is of key importance. Such an analysis is needed not only to ascertain the present status of the industry and its future prospects for expansion, but as a basis for estimating the ability of the industry to make profits. It is not difficult to find out for *what* purposes most chemical products are used, but it usually requires much study and inquiry to be able to say *how much*. First of all an effort must be made to survey the present market. When the total volume of production cannot be found directly from published statistics, it may be estimated indirectly from them, or from other known facts. The volume of production must then be broken down at least into the chief uses which consume from 60% to 75% of the total. Frequently the quantity used for any particular purpose must be calculated in a roundabout way. For example, anti-freeze is the most important single use for industrial alcohol. An estimation of the market can only be made by considering the volume of the average automobile radiator, the number of automobiles in use in states with freezing weather, the average duration of the period during which there is danger of freezing, the total quantity of gasoline consumed during the winter and summer months, etc. Reliable estimates may often be obtained from the publications of the United States Tariff Commission and the trade journals.

Trend of the Future

From this consideration of the present market the report moves on to a full discussion of the probable trend of future consumption, bringing to light all the important points concerning the future of the industry. The "trend" is merely a mathematical or graphic projection of the industry's rate of growth in recent years. Taken by itself it is practically valueless, for it does not show in any way the forces which may cause an increase or a decline in the future rate of growth. The estimation of the future of the industry can only be done by considering the rate of growth of each of the chief markets individually. For instance, the chief use for sulfur is of course sulfuric acid which, in turn, is used in the manufacture of fertilizers, in oil refining, etc. Therefore, the calculation of the probable annual consumption of sulfur during the next five years involves among other things an estimate of the rate of growth of the fertilizer and oil refining industries, as well as of new technological developments which may seriously affect them.

When the probable rate of growth of each of the present markets has been analyzed, a survey is made of the possibilities of any new markets that are likely to be opened up through research activity or from new industrial demands. A careful consideration of the attention paid to research is invaluable in determining

the future prospects of the industry. The laboratories listed in the Research Laboratory Bulletin of the National Research Council, and the number of articles published in the scientific journals give some indication of the industry's activities in research work.

Competition within the industry is also investigated. By taking into consideration all these factors and comparing them with the previous trend of the industry, the *normal* development of the industry may be predicted with considerable accuracy. Superimposed upon the general upward growth of most American industries are various short time fluctuations. Seasonal variations may be due either to the fact that supplies of raw material are available only at certain periods, or that consumption is seasonal like the anti-freeze alcohol trade, for example. Cyclical variations are those which operate over a period of several years as the industry advances or recedes with the general level of business activity. It is important to know whether the industry in question is likely to suffer greatly or not at all during a period of general industrial depression.

The Big Question

These factors of variation in demand are very important from the investment trust point of view, because they are indispensable in anticipating a company's quarterly and annual earnings and in following the progress of an industry from month to month.

For those who are financially interested in a chemical industry, all the subjects discussed above are merely the groundwork for the construction of a final section which answers the question "How much profit will be earned?" It is a truism that the profits of an industry are essentially determined by the volume of production and the margin of profit, which is the difference between the cost of production and distribution, and the selling price. Determination of margin of profit is a considerable task in any industry, but in a chemical industry, with main products, joint products, and by-products, and with the relations between them shifting from time to time, it is often all but baffling. Typical manufacturing costs and overhead cannot be estimated as a rule, but must almost invariably be obtained from men in the industry. But from a consideration of the type of process, it is possible to tell how unit manufacturing costs will fluctuate depending upon the volume of production; and also whether the general tendency of manufacturing costs is stable or downward. Labor costs in chemical industries are always low in comparison with the value of the products manufactured. Cost of raw materials is frequently an important part of the cost of production, and it may be subject to considerable fluctuations especially if the product is of agricultural origin. Corn, which is used in the manufacture of butanol, is a good example. Therefore, one of the chief tasks in the study of profits is to analyze the price movements

of the raw materials and the consequent effect on the profits earned by the industry.

In order to anticipate the future price of an industrial chemical it is often advantageous to compare a series of former quotations with those for similar products or with the *Chem & Met* index of chemical prices. It is very important that the factors which influence selling price be discovered and studied. A problem which often comes up in the study of profits relates to the competition between two somewhat similar products such as butyl acetate and cellosolve, or between sulfur and pyrites. A typical question is "How high can the price of sulfur go without encountering serious competition from pyrites?"

Costs of distribution are carefully investigated, for it is quite possible for all the profits of efficient manufacturing to be wiped out by the excessive costs of ineffective marketing. The field of inquiry must be limited to a single company if such figures are to be estimated quantitatively, but it is, of course, possible to note the general character of the costs to the industry as a whole.

Attention is given to the selling methods of the industry to see whether contracts are made below the listed prices and whether rebates to customers or other unbusinesslike trade practices are indulged in. There is also apt to be a tendency to push production to such a peak that there is "volume without profit."

Advance Earnings Forecast

In conclusion, having estimated the annual volume of production during each of the next five years, and having calculated the margin of profit and the factors which influence it, the report gives an estimate of the earnings of the industry about one year in advance, and at the same time a qualitative idea of the general trend of earnings over a somewhat longer period.

As a result of such an industrial study, it is possible to discover which industries have the best opportunities for growth, and which of the companies within the industry are the most likely to reap the benefit. Finally, when this information is supplemented by a careful analysis of the particular company under consideration, the research organization is able to recommend intelligently which securities should be bought, held, or sold.

Freeport Texas Co. reports production for quarter ended June 30, of 241,335 tons, constituting the largest production for any quarter in company's history. Previous record production was 230,350 tons, established in quarter ended September 30, 1927. Production for quarter ended June 30 is an increase of 47,080 tons over preceding quarter, and compares with 202,070 for quarter ended June 30, 1927.

Company is currently producing at record levels and has more orders on hand than at this time last year. Owing to expiration of several low priced contracts Freeport Texas is receiving a higher average price than prevailed at this time in 1927.

Exports are currently maintaining last year's record rate. Outlook for good earnings during third quarter is bright.

New Incorporations

Hurley-Johnson Corp., New York City, dyes. \$150,000. T. L. Hurley, 11 Park Pl.

Southern Clay Corp., New York, commercial clay. \$1,000,000. Registrar and Transfer Co., Wilmington.

Webb, McBride, Inc., Philadelphia, bleaching preparations, cosmetics, drugs, pharmaceuticals. \$100,000. 2,000 shs com. U. S. Corp. Co., Dover, Del.

Imperial Chemical Industries (New York) Ltd. \$1,000. Palmer & Series, 46 Cedar St.

The Federal Oil & Asphalt Co. Inc., Wilmington, oil, natural gas. \$2,000,000. F. L. Mettler, Wilmington, Del.

Hydro Peat Products Corp., Wilmington, peat fertilizers. \$500,000. Corp. Service Co., Wilmington, Del.

Southern Lime Products Co., Wilmington, limestone, lime rock. 3,000 shs com. Corp. Trust Co. of America, Wilmington, Del.

The Rayon Institute of America, Inc., Wilmington, institute of information to advance legitimate interests of producers of rayon. No capital stock. Southern Trust Co., Wilmington, Del.

Agricultural Chemical Works, Newark, manufacture chemicals. 200 shs com. Fred J. Rosenbaum, Newark, N. J.

Petrolene Corp., make chemicals. \$25,000. A. L. Berman, 551 Fifth Ave., N. Y.

Original Julius Marcus Laboratories, food products. \$25,000. Grauer & Rathkopf, 140 Nassau St., N. Y.

Penn Echo Co., Dover, chemicals. \$100,000. Capital Trust Co. of Del., Dover, Del.

Chemicolor Wood Preserving Co., Wilmington, treating and inoculating standing trees, plants. 2,000 shs com. Corp. Trust Co. of Am., Wilmington, Del.

Kendall Refining Co., Inc., Wilmington, petroleum, oils, sulphur. \$10,000. Corp. Trust Co. of Am., Wilmington, Del.

Theresa Pharmaceutical Inc., make chemicals. \$5,000. F. Becker, 15 Park Row. New York City.

Seatafi Chemical Co., Brooklyn. \$100,000. G. Abrams, 350 Stone st., Brooklyn, N. Y.

Pann. Echo Co., Dover, Del., chemicals. \$100,000. 2,000 shs com.

General Compounding Corp., Wilmington, Del., drugs, chemicals. 100,000 shs com.

Swiss Paint Co., New York, paints, colors, etc. \$5,000. Abraham Cohen, Lafayette St., New York.

J. T. Robertson Co. Inc., 147 Richmond Av., Syracuse, N. Y., soap, cleansing and scouring articles. 5,000 shs pref., 65,000 shs com.

Federal Exterminating Corp., Jersey City, insecticides. \$2,000. Corporation Trust Co., Jersey City.

Camden Commercial Co., Camden, chemicals. 2,500 shs com. New Jersey Corporation Guarantee & Trust Co., Camden, N. J.

George H. Fick, New York, chemicals. 250 shs com. C. H. Briscoe, 61 Broadway, New York.

Clymol Chemicals, New York. 500 shs com. Gotthold, Pitkin, Rosensohn & Travieso, 27 William St., New York.

Regan Tungsten Co. Inc., of Delaware, Wilmington, minerals. \$500,000. Colonial Charter Co., Wilmington, Del.

Gold Seal Beverage Corp., New York, carbonated, aerated waters. \$25,000. Shaine & Weinrib, 225 Broadway, New York.

Kelloggs & Miller, Amsterdam, linseed products. \$600,000. Myers & Searle, Amsterdam, N. Y.

Nitrate Corp. of Am., Marfa, Texas, minerals. 50,000 shs com. Corp. Serv Co., Wilmington, Del.

Southern Chromium Corp., Wilmington, mining. \$100,000. Colonial Charter Co., Wilmington, Del.

The Chiney Chemicals Ltd., Toronto, Ont. \$50,000. Thomas B. Farrell, Frank M. Squires, Robert S. Joy.

Howard, Greenberg, Tremble Co. Ltd., Montreal, Que. Rubber products. 200,000 shs no par value. Myer Gameroff, Claire Solomon, Abe Siedman.

Monedo Ltd., Montreal, Que., Chemicals. \$10,000. Achille Raymond, Gloria Hemond, Arthur Lalonde.

Rolland Paper Co. Ltd., Montreal, Que. \$2,500,000. Shirley G. Dixon, David M. Johnson, William H. Wilson.

The Luzora Co., Montreal, Que., polishes. \$15,000. Walter S. Mitchell, Thomas F. Hlett, Hugh M. Watson.

The Julie M. Barker Ltd., Toronto, Ont., paper. \$500,000. John C. Morehouse, William Atwells, Lyle Ramsey.

Alliance Paper Mills, Merriton, Ont. \$3,000,000. William S. Morlock, Bruce V. McCrimmon, John G. Middleton.

CHEMICALS

in the Dutch East Indies

By K. R. F. Blokzeijl

Our East-Indian Correspondent

THE increasing commercial and agricultural prosperity of the Dutch East Indies during years is leading to a substantial improvement in the demand for chemicals and fertilizers, especially on European-controlled plantations. This is shown, among other things, by the fact that total imports of chemical manufactures into Java for 1927 amounted to 192,558 tons, as against 158,076 tons in 1926.

Imports of heavy chemicals have all increased within the last year, with the exception only of alum and acetic acid. The latter chemical, although still in use as a coagulating agent in the rubber industry, shows a marked decrease in volume during the past year, only 69,000 kilos being imported into Java, as against 143,000 kilos in 1926. This fall is due to the increased use of formic acid, which now occupies a rather prominent place in the coagulation of rubber latex, and which was imported to the amount of 766,000 kilos into Java and Belawan (Sumatra). Formic acid, however, is said to be by no means a perfect coagulant since all possible precautions have to be taken in order to protect the iron rollers used in rubber factories from too violent corrosive action of the acid. On some estates where conditions are less favorable prolonged working hours and scanty water-supply the wear upon the rollers necessitated a return to the use of acetic acid. On the majority of plantations, however, formic acid, being more economical, is generally being applied.

It is worth mentioning that with some other coagulants, viz. natrium silico fluoride and magnesium silico fluoride, experiments are being made on a large scale. Some estates in Sumatra are already able to show favorable results when applying these chemicals.

Fertilizer Imports Increase

Imports of chemical fertilizers increased from 115,076 tons in 1926 to 135,784 tons last year, as far as Java is concerned. Mixed fertilizers are chiefly in demand, these being made up of nitrogen, phosphate and potash. Tobacco estates and rubber plantations use sulfate of ammonia extensively, but large quantities of this fertilizer are also yearly imported for the sugar culture in Java, and in 1927, 125,890 tons were used by this island alone, as against 108,162 tons in the

previous year. Of the first-mentioned quantity the U. S. A. being the chief supplier with 75,463 tons. In 1927 also 6,371 tons of super-phosphate and basic slag were unloaded in Java. A considerable quantity of this manure is used for fertilizing tobacco fields.

Java remains the principal trading center of the islands, but the economic progress of the East Coast district of Sumatra has been very rapid in recent years, and that advancement was well maintained last year. The rubber and tobacco estates in that district continue to order large quantities of chemicals and fertilizers from abroad and, when final trade figures for 1927 are published it will doubtless be found that imports have increased as well.

United States Not a Factor

It is estimated that the bulk of the fertilizers, probably 80 per cent., come from Holland, the remainder being supplied by Great Britain, Germany, and Belgium. Germany supplies chiefly the phosphates, whereas industrial chemicals for use on the estates as well as insecticides are mainly supplied by England, Germany and Holland. Tenders are called in April or May, delivery being made in the following autumn or winter.

Liquid ammonia is used as an anti-coagulant, and of the 17,286 kilos imported into Java in 1927, 10,426 kilos were sent from Holland. In bleaching crepe rubber and sheet rubber, sodium bisulfate and pyrosulfate are used and were imported to the amount of 236,706 kilos in 1927.

In addition to heavy chemicals, there is also a good demand in the Dutch East Indies for refined chemicals, medicines, patent medicinal foods and photographic chemicals, also chemicals required for the manufacture of aerated waters, syrups and cordials.

As far as trade in artificial dyes is concerned, Germany, as usual, figured last year as the most important supplier of aniline and alizarin colors used in the battick industry. Owing to the amalgamation of German factories, the mutual competition has disappeared. Besides the above-mentioned country, France and Switzerland also imported these dyes. Compared to Germany, however, these imports are effected on a moderate scale only.

Are Mergers Economically Sound?

Probably no other industry in the country today is in a better position than the chemical industry to give thought to the trend toward merger. The Sherman Corporation submits the opinions of many leading financial minds on the stability of this movement.

THERE is no doubting that fact that we are in an era of merger and consolidation. The evidence is in the newspapers almost every day. Bankers, Manufacturers, public utilities, department stores, jobbers, are seriously considering what merger may mean, with particular reference to their own industry or business.

The bringing-together of business units is not new. Between 1888 and 1893 there were great industrial combinations, and again, between 1897 and 1903. Many of these were the so-called production mergers in which production monopolies and price control were dominating purposes. The working out of these purposes in a way that was regarded as inimical to public interest led eventually to reaction in the form of investigations, "trust-busting" and the injection of suspicion into the public attitude toward big business.

Since those days, business has changed. Higher ethical standards prevail. Business which has grown to giant proportions in the past two decades has done so through serving public interest and not through exploitation. The merger trend to-day encounters a change in public attitude. Generally speaking, big-business has become synonymous not with exploitation but with efficiency, improved service and reductions in price. "The public be served" has replaced "the public be damned" as motive and attitude of large enterprises.

Merger for Distribution

Whereas the merger of the past eras of consolidation sought to control production, to-day's mergers in general aim at a more efficient control of distribution in the interest of lower prices and better service to consumers. We have, therefore, the modern "distribution merger."

The degree to which businesses have come together is illustrated by the fact that in our analysis of the first thousand companies listed in Poor's Manual of Industrials two hundred companies, or one out of every five, proved to be the result of some form or other of consolidation, amalgamation or merger.

The form of coming-together varies. One company purchases one or two other factories outright and

these factories are run as branch plants. In another case, the securities of one or several companies, have been acquired, and are in a holding company. In another, plants, products and selling-marketing machinery have been merged without disturbing the products, and the new merged company functions productionwise with the original plants but with a co-ordination of selling, financing and management. A full picture of the how, the wherefore of the matter would require volumes.

The major fact is that, not only is merger and consolidation happening, but it has happened.

Factors of Cause

There are many factors of cause. Among them are:

Growth of mass production and mass distribution;

Surplus of physical plant—of brick and mortar, of machines, of equipment;

Necessity of meeting the competition of big business with adequate financial sinews;

Changes in methods of distribution, notably the growth of chain distribution;

The development of advertising;

High cost of selling and distribution, contributing to which high cost are the many duplications of effort and expense where many competitors are attempting to reach the same market;

The complex character of business itself, making it difficult for one or two managing executives of a small company to direct effectively production, sales, merchandising, styling, financing, advertising, etc.

Changes in the character of the consuming public, such as the desire for new styles and new things;

The growth of installment or spaced payment selling, with its requirements for financial resources on the part of the seller.

There are other factors. They interlace, and react upon one another to such a degree that an accurate analysis of the degree to which one factor or another has brought merger into the spotlight is most difficult.

There is the matter of competition, for example, with all of its roots, stems and branches.

An executive feels he must have more business. His plant is running only half or one-third capacity. So he shades his price or makes concessions which are equivalent to price reduction. Business comes, or perhaps it doesn't. In any event, the price-cutting tendency has reached such a point in some lines of business that profits just "aint." There are Federal laws against "price-fixing" and politicians are as scary of anything which bears a semblance to a price agreement as an old maid when the lightning flashes warning of an impending thunder-storm. How natural it is, therefore, for executives to begin to think of getting together in a merger or a consolidation; to seek the promise of strength and economy held out by examples of consolidation.

Tied up with the competitive situation is the profit trend. Everyone knows that the lion's share of net moneys is reported by the big companies, and that the making of a net profit is becoming more and more difficult if one is small or middle-sized. The fact that this generality is, like all generalities, subject to exceptions, has not been given such wide publicity, and yet there now are and probably always will be small manufacturers "sitting pretty"—getting satisfactory business; holding it, and showing a satisfactory return in capital invested.

Big Business in a Big Country

A fact not taken into account by some observers, who see in the growth of big business a trend inimical to individual ambition, initiative and independence is the tremendous expansion of wealth and of industrial activity in America. The following comparisons of America to-day with fifty years ago will illustrate this fact:

	50 Years Ago	To-day
Population.....	45 million	118 million
National Wealth.....	40 billion	360 billion
Bank deposits.....	2 billion	52 billion
Savings deposits.....	2 billion	23 billion
	(45 million accounts)	
Value of manufactured products.....	4 billion	75 billion
Insurance policies.....	2 billion	87 billion

Such growth will mean bigger business in the future than in the past. David F. Houston, President of Mutual Life, commenting declares that "big business will become bigger. Big business of to-day is a pigmy compared with what it will be fifty years from now. No man had enough imagination fifty years ago to picture what business would be to-day, and no man to-day has imagination enough to picture what it will be fifty years from now. No man with whom I have been acquainted has had enough imagination to keep up with America in the conduct of his business.

"Big business, it is significant, is less feared than the little of thirty years ago and the bigger business of

fifty years from now need not be feared if the present ethical tendencies of to-day improve as much in the next fifty years as they have in the last thirty."

It hardly seems necessary, in view of such broad facts as the above, to view the current merger and consolidation trend with alarm, for insofar as some mergers are unsound, they carry the seeds of their own undoing, and insofar as they are sound, they undoubtedly will succeed.

They will be sound in the degree that the "ins" and the "outs" of mergers are analyzed and understood, and it is in the promotion of such an understanding that The Sherman Corporation is making its present study.

As one phase of it, we have conferred with a great many bankers and industrialists who have had experience with mergers and consolidations, or who have been close enough to such experience, to give practical opinions and judgments.

We will present in the balance of this report a digest of the facts and opinions from one group of the executives canvassed, namely commercial and investment bankers.

Twenty-two states were represented in our investigation, carried on by interviews and by correspondence, and material was secured from several hundred representative bankers. Naturally, all of that material would bulk too large to be included verbatim, interesting and valuable as it is. We, therefore, present running excerpts.

In many cases, we were requested not to use names and, to make the material uniform in this regard, we have omitted all names.

"There are too many people in business for themselves," comments the President of a Chicago Commercial bank, "too many little people. They never should have been in business for themselves because they were not that kind of people. They should have been a part of an organization and not the organization itself.

Tends Toward Efficiency

"It takes many different kinds of qualities to make for permanent success in business and very few people have them all. A man may be a genius in advertising and a failure in service, a wonder producer and a poor seller. He may have unusual qualities as an organizer and be a poor financier. His judgment may be all right in five places and weak in one and, since a chain is no stronger than its weakest link, he fails to carry the load. But combine these various qualities into one organization and you have a strong, cohesive business unit."

The prompt merging of manufacturers and others in kindred lines, especially in fields where the possibilities of marked expansion are distinctly limited, is an absolute necessity if American industry is not to see the complete disappearance of its narrowing margins, in the judgment of the Treasurer of a National Investment House. "In fields where the opportunities

for expansion are still broad," he says, "the necessity is not so apparent. Nevertheless, mounting selling costs continue to take an utterly unreasonable toll from industry, and intelligent mergers result in lower selling costs, better facilities for doing business, lower costs to the purchaser, and in increased profit.

"Widespread advertising, intelligent engineering and great distribution should certainly mean something more than declining earnings. Sensible mergers in my experience answer the questions."

A Wilmington bank president considers it only common sense when that stores combine, able to buy in trail-load lots, and pass the savings on to the public, at the same time furnishing positions for the small merchants at salaries larger than their incomes previously were, it is a good thing, and this holds true in many varied lines.

"Consolidations or mergers are beneficial," he declares, "where the concerns merged are financially and economically sound. 'This reminds me,' he said, 'of an experience I had years ago, before the time of automobiles, when most of us were driving horses. In buying a team or pair of horses, the dealer or seller was trying to get rid of an unsound horse by mating him with a sound one. That would not make a sound team by any means and the same thing is the case in mergers.'"

Lower Prices to Consumers

It is the opinion of a leading Boston Investment Banker that there is a strong tendency towards coordinated control in industry and banking, and that such mergers will benefit the public. "Consolidation of capital and the brains to employ it is economic," he observes.

"Years ago monopolistic control was thought to be based on the purpose to control production of commodities and to sell them at prices disadvantageous to the ultimate consumer. The modern thought and desire of big business are directly opposite.

"The consolidation of capital creates opportunity for centralizing buying power. It enables the various corporations consolidated to offer their commodities at lower prices—hence, broader use and demand for them. The survival of the fittest is an economic truth. Many industries to-day are existing only through their ability to borrow money from banks, and banks in turn resort to the Federal Reserve Bank to market their paper. It would be far better for many small concerns to step out of business which would give opportunity for worthy concerns to exist without the competition the little fellow presents and too often the little fellow lives by cutting prices, and yet continues to borrow money. Of course, there is always the possibility of monopoly becoming so tremendously large that by its own weight it bursts. It is then that the off-shoots can successfully compete with the big monopoly."

There are many instances where mergers have been beneficial not only to the merged corporations but to

the public. Other mergers have not been beneficial to the general public. Merged institutions have lost a very important consideration, according to a Cleveland Banker, and that is in their failure to keep in personal contact with the customers who have in a large measure been responsible for the upbuilding of the business. This is true particularly in banking institutions in the smaller cities where the personal element enters very largely in the successful handling of a business.

"These have not been, to put it mildly, appreciated by those who were largely responsible for the creation of separate institutions. This is not so true of industrial and railroad companies or other large corporations where the personal element cuts a small figure.

"The good will of the public is responsible for the success of most businesses that deal with the public. The old Vanderbilt slogan, 'The Public Be Damned' has gone out of date; in fact, the public has reversed the statement. It is essential for the principal officers of merged institutions to keep in personal touch with the customers as closely as they could before merging."

Certain Conclusions

Certain reasonable conclusions, it seems, may be drawn, bearing upon the current merger trend. We present a few such conclusions herewith:

1. Merger in field of industry, offering limited expansion opportunity is economically desirable, if the merger is formed soundly and thoughtfully and provided with strong, capable management;
2. Scientific, preliminary analysis of all the factors in proposed merger is essential;
3. The personal, human equation is the key factor in a merger and must be dealt with in a way that will assure thorough cooperation and unified control of the merged companies;
4. If a merger's primary objective is the sale of watered stock to innocents, it is economically and socially subversive;
5. The potential advantages to be gained from sound merger are to-day more in distribution than production and perhaps the factor of greatest possible advantage is reduction of selling costs through elimination of duplications in salesmen covering the same territory.

Other advantages proven in degree by cases of successful merger are:

Reduction of costs and overheads; reduction of prices to the consumer; broadened markets; the combination of diversified qualities of managerial abilities in a strong, cohesive organization; increased diversity and strength of financial control; subtraction of duplications, whether of production equipment, buildings, overheads, selling costs, etc.; increased net profits.

Manufacture of Tanning Extracts as an Improved

Waste Utilization

of Sulfite Liquors from the Wood Pulp Industry

By Dr. R. Escourrou

THERE are very few industrial waste products upon which such intensive study has been expended as sulfite cellulose liquors. The problem of their disposal is all the more important because the amount of liquor produced during manufacture is greater than that of the wood pulp. The latter amounts to only about one half of the dry wood used, the other half of the wood passing into solution during cooking.

Originally, the liquor was considered as valueless, but as the result of the work which has been carried out on the subject, such liquors, or the products made therefrom, are now of great technical importance.

In the preparation of wood pulp, two methods are used, viz., the soda process and the bisulfite process. In the former, the black liquors obtained as a by-product could be distilled for the recovery of methyl alcohol, acetone, aldehydes, phenols, tar, soaps, etc., but the necessity for recovering the soda to be subsequently re-causticised rather lessens the importance of isolating these materials. In the bisulfite process, the wood is treated with solutions of calcium or magnesium bisulfite with a certain proportion of free sulfur dioxide. Pictet and Tharalsden (Norw. Pat. 43,338 of 1925 and Fr. Pat. 616229 of 1926) use sulfur dioxide alone under pressure. The bisulfite process generally can be used with quite a number of woods apart from spruce and pine; for according to Serlachius' process (Dutch Pat. 27616 of 1924) the addition of a small amount of sodium ions to the bisulfite liquor allows the solution of the resins to take place. During cooking, it is generally understood that the addition of SO_2 to the lignin molecule takes place to form sulfonic acids of uncertain constitution. (The structure of the lignin molecule itself has not yet been firmly established, although it is thought to be a condensation product of coniferyl alcohol, possessing an aromatic nucleus and capable of sulfonation). Other reactions which take place during cooking include the hydrolysis of polysaccharides,

No waste problem has, as this famous authority points out, been more studied than this, and this modern solution of the problem is another pretty example of the victory of the laboratory over the land, the substitution of a chemical for natural tanstuffs

pentoses and hexoses to give soluble sugars.

The waste liquors thus formed have been put to a number of uses which are the subject of a number of patents. Thus the liquor can be fermented for the production of alcohol, while another use is as a binder for the manufacture of sand cores for foundry work. Again it forms the raw material for the manufacture of decolourising carbons (Fr. Pat. 485412 of 1917). By

treating the liquors with polysulfides, brown dyes are produced, while on nitration yellow-orange colours are formed. Rasser mentions the preparation of a detergent from sulfite liquors which can be used for wool washing and the extraction of grease. Other uses which can be mentioned are the protection of fibres during dyeing (Fr. Pat. 538492 of 1921, E. P. 171981 of 1921), the reduction of chrome salts (E. P. 188632 of 1922), the manufacture of acetone by the Western Virginia Pulp and Paper Co.'s process and finally the manufacture of tanning extracts.

Although tanning extracts can be made from waste sulfite liquors, such extracts cannot be put upon the same plane as the natural tanning materials such as quebracho, myrobalans, mimosa, etc., but at the same time, when properly prepared they do have very interesting properties. It is not claimed by manufacturers that they contain tannin, but they do contain matters absorbable by hide which are capable of producing leather. The prejudice against these extracts has been mainly on account of the quality of the products offered in the past. At present, however, it has been said by English tanners that a good sulfite extract can be used in the manufacture of certain leather with advantage and large quantities are used in America, Germany and England.

There are several methods for preparing suitable extracts from the waste liquor and numerous processes for purification have been patented, viz., the addition of chromium and aluminium salts to the liquor (Fr. Pat. 515242 of 1920, Ger. Pat. 420802 of 1921 and

U. S. Pat. 1523982 of 1922); treatment with lime carbonates of lime, soda or potash (U. S. Pat. 1592 063 of 1923, etc.); the action of sodium or potassium cyanide or sulfur in alkaline solution (Ger. Pat. 441770 of 1927); the addition of ferric chloride (U. S. Pat. 1569578 of 1924); treatment with sulfuric acid, oxalic acid, lactic acid, butyric acid with subsequent concentration (Ger. Pat. 183415 of 1905); or by the action of chlorine direct on the liquors giving rise to halogenated quinone-like substances (Fr. Pat. 508894 of 1919). The chlorinated product can be again oxidised by such agents as calcium chlorate in the presence of hydrochloric acid (Fr. Pat. 533884 of 1921 or Ger. Pat. 406043 of 1921). According to Hilpert chlorine acts by substitution, oxidation and condensation with the elimination of several sulfo groups and the chlorinated products which are good tanning agents are, according to this author, good disinfectants.

Another type of product is that exemplified by the Italian product "Alfa" which is obtained by condensing the sulfonic acids from the liquors of esparto grass with formaldehyde and which is said to be similar to a synthetic tannin. Another process evolved is that contained in Ger. Pat. 423096 of 1922, in which the sulfite cellulose liquors are esterified with aromatic sulfochlorides such as *p*-toluene sulfochloride. Quite a different method consists in the electrolytic separation of free ligno-sulfonic acid, this being deposited on the anode, while the previously combined lime collects at the cathode, the electrodes being separated by a diaphragm (Fr. Pat. 519960 of 1918), but the cost of the process has prevented its adoption, in spite of the fact that the ratio of tan to non-tan is in the proportion of 3:1 and the ash content is about that of an ordinary vegetable tanning extract.

Powdered Extracts

There are two types of cellulose extracts on the market (1) powdered extract and (2) liquid extract. The solid extracts are prepared simply by concentrating the liquor to the desired strength in multiple effect vacuum evaporators, the solution having previously been purified by one of the methods mentioned. As the hot product leaves the evaporator it is very viscous, but on cooling it sets to a hard mass which is crushed and ground. In an American process, to ensure the complete removal of all sulfur dioxide, the liquor is atomised and converted into a fine powder, the weak liquor being sprayed from the top of a chamber, while the hot gases enter from the bottom. By this quick counter-current system, any unnecessary heating is avoided. The fine powder is collected in partitioned chambers or is electrically precipitated by the Cottrell process.

In this powdered form, the extract is certainly more convenient for transport and storage and as its hygroscopicity is low, it can be packed in cotton bags lined with paraffined paper. It has, however, one serious drawback (outside of its high price) and that

is, the ratio of tans to non-tans is low, and further, lime has to be added to neutralise some of the acidity. Thus, lime to the extent of about 10 per cent. is left in the extract, which, of course, is unsatisfactory from the tanner's point of view. The powder, too, is rather bulky. For these reasons, solid cellulose extracts are steadily falling from favour, so much so, that American liquid extracts are imported into France.

Composition of Powdered Extracts

	American Per cent.	French Per cent.	German Per cent.
Tannins.....	30.0	32.2	37.8
Non-tans.....	66.7	62.4	55.7
Water.....	3.3	5.4	6.5
Acidity as H ₂ SO ₄	1.5	0.7	0.6
Ash.....	11.1	14.3	12.7
Line.....	9.8	0.6	7.3
pH in solution.....	5.9	6.6	6.4
Fluorescence in powder.....	pale violet.	yellow.	dull violet.
Fluorescence in solution.....	deep violet.	violet.	strong violet.

Liquid Extracts

The types of liquid extract are more numerous and, although not so widely used in France, they are widely used abroad. Condensed sulfonic acids are the basis of synthetic tannins and it is to such acids that the tanning properties of extracts are attributed. Hide substance consists of large molecules of a basic character possessing primary amino groups which combine with the sulfonic acids to give leather substance. The following table shows the composition of various cellulose extracts, supplied by the makers and analysed by the international method, using B.13 hide powder:

Name	Non-tans	tans	Water	Ash	pH
Bleich Deka (a).....	22.1	13.3	64.6	7.8	3.7
Extrakt Deka (a).....	37.9	13.9	48.2	10.6	3.9
Queol (a).....	35.7	13.4	50.9	8.8	5.3
Embasol (a).....	22.4	12.5	65.1	7.6	2.5
Garvestoff (b).....	42.2	10.4	47.4	6.2	3.9
Hansa (c).....	27.3	18.1	54.6	9.1	1.9
Super Spruce (d).....	28.6	23.9	47.5	3.4	2.0
Wood Ext (e).....	37.3	15.6	47.1	7.7	3.8
	48.0	10.7	41.3	14.2	8.3
Quicktan N (f).....	21.8	24.7	53.5	2.0	1.8
" RT (f).....	26.0	23.1	50.9	1.5	3.0
" SA (f).....	32.1	21.1	46.8	1.7	4.0
Saxonia (g).....	27.7	18.2	54.1	10.5	2.3

(a) German, Deutschen Kolonial Gerb und Farbs. Karlsruhe.
 (b) Norwegian, Garvestoff.
 (c) German, Rophil Extrakt, Waldhof-Mannheim.
 (d) American, Robeson Process Co.
 (e) English, Owens, Liverpool.
 (f) French, Binders International Co.
 (g) German, Byk Guldenwerke.

Naturally, the analyses will vary a little according to slight variations in manufacture. The extracts have a tanning value greater than that shown by the official analysis and the Freiberg filter method gives more exact results (tans 28-30 per cent. and non-tans 14-16 per cent.)

The ash content of the extract should be as low as possible as salts hinder the penetration of tannin and

at the same time increase the mineral ash content of the leather. For heavy leather intended for the French army, an ash content greater than 1.6 per cent. would not be accepted. Again, a low ash content shows the successful elimination of lime from the liquors and, as is well-known, lime is fatal in the tanning process, where it can arrest all penetration. The ash content of chestnut extract is about one per cent and of sulphited quebracho extract 2-3 per cent. The ideal figure for a sulfite extract would be of the same order as that of ordinary vegetable extracts.

A slight acidity is necessary to produce the desired swelling of the pelt and to aid penetration of the tans. but although weak organic acids which will not injure leather are quite satisfactory, the strong acids, such as are often found in synthetic tans are to be avoided. The acidity can best be determined by the pH value. With regard to this latter, it has been found that for a tan liquor of 4-5° Be a pH of 2 is good, while for a liquor of 1-2° Be a pH of 4 will ensure good penetration. As cellulose extracts are usually used in admixture with natural vegetable extracts, a pH between 2-3.5 would be permissible. The amount of non-tans in these types of extract is comparatively high, but even some natural materials are high in this constituent, e. g., gambier, where the non-tans often exceed the tans.

In certain cellulose extracts, the high non-tans are not due to soda salts as is the case with synthetic tans, but to organic substances which are slowly absorbed by hide after partial transformation into tans, as has been proved by Schultz and Wilson ("The Chemistry of Leather Manufacture"). The 6-7 per cent. of sugars present will also form acid by fermentation and such acids are favourable to tannage. A good sulfite cellulose extract should be practically free from lime and quite free from iron. With the latter present, when used in conjunction with chestnut extract a greyish colour will be formed on the leather.

In Germany it is common practice to use sulfite cellulose extract for rendering quebracho extract soluble and it has been shown that the insoluble matter in the quebracho is converted into useful soluble tannin. The sulfonic acids present also lessen the astringency of the liquor and accelerate the penetration of tannin. The very marked colloidal properties of cellulose extract permits it being used as a dispersing agent for other tannins and at the same time protects the latter from oxidation.

Dnjeprostroy, a Russian syndicate, is said to have an understanding with the I. G. and with German Nitrit-fabrik A. G. Company is planning erection of plant for production of calcium carbide synthetic acetic acid and methanol.

Imperial Chemical Industries, Ltd., London, secures large interest in Malagash Slat Co., operating in Malagash Peninsula, Nova Scotia. The British company is particularly interested in the commercial development of potash deposits in the locality.

Foreign Trade Opportunities

Amyl-alcohol and aldehyde . . .	†32119	Hamburg, Germany . . .	Either
Benzol, coal tar and pitch . . .	†32117	Paris, France . . .	Agency
Calcium acetate . . .	†32118	Hamburg, Germany . . .	Purchase
Celluloid film, unwashed, 10 to 20 tons . . .	†32183	London, England . . .	Do
Chemicals, fine . . .	†32168	Madras, India . . .	Agency
Chemicals, industrial . . .	†32111	Toronto, Canada . . .	Do
Do . . .	†32112	Do . . .	Do
Disinfectants, insecticides, and chemical specialties . . .	†32109	Potsdam, Germany . . .	Do
Fertilizers (bones, and sulphate of copper, ammonia, and iron), and basic slag . . .	†32117	Paris, France . . .	Do
Insecticides, agricultural . . .	*32116	Milan, Italy . . .	Purchase
Lime, acetate of . . .	†32228	Hamburg, Germany . . .	Do
Paint guns . . .	†32117	Paris, France . . .	Agency
Paints, enamels and varnishes . . .	†32167	Bombay, India . . .	Do
Paints, pigments, varnishes, and polishes . . .	†32109	Potsdam, Germany . . .	Do
Paints and quick-drying varnishes . . .	*32197	Caracas, Venezuela . . .	Purchase
Paints and varnishes . . .	†32168	Madras, India . . .	Agency
Rosin . . .	†32111	Toronto, Canada . . .	Do
Rosin, gum and wood . . .	*32114	Hamburg, Germany . . .	Do
Rosin and wood oil . . .	†32110	Do . . .	Do
Sulphur . . .	†32227	Do . . .	Either
Varnish gums and waxes . . .	†32115	Mexico City, Mexico . . .	Purchase
Ochre, Peruvian, for linoleum manufacture . . .	*32309	Liverpool, England . . .	Either
Phosphate, acid . . .	*32311	Levis, Canada . . .	Purchase
Phosphorus, amorphous, red; sesquisulphide of phosphorus, and white phosphorus . . .	*32301	Colima, Mexico . . .	Do
Photographic chemicals . . .	*32313	Do . . .	Both
Rosin, darker varieties . . .	*32261	Goteborg, Sweden . . .	Agency
Rosin and turpentine, and caustic soda . . .	*32248	Porto Alegre, Brazil . . .	Do
Stearic acid . . .	*32301	Colima, Mexico . . .	Purchase
Sulphur, crude . . .	*32261	Goteborg, Sweden . . .	Agency
Borax . . .	†32319	Melbourne, Australia . . .	Agency
Cement, leather, quick-drying . . .	*32353	Keighley, England . . .	Both
Cements and coatings, water-proof . . .	†32316	Hamburg, Germany . . .	Purchase
Coal-tar intermediates . . .	†32318	Do . . .	Do
Matches . . .	*32352	Liverpool, England . . .	Do
Paints, roof, asphaltum, and acid-resisting . . .	†32316	Hamburg, Germany . . .	Do
Rosin . . .	*32336	Venice, Italy . . .	Do
Rosin, turpentine, turpentine, substitutes, soda ash, caustic soda, sodium bicarbonate, and sodium silicate . . .	†32319	Melbourne, Australia . . .	Agency
Soda, caustic, white . . .	†32337	Milan, Italy . . .	Purchase
Sulphur . . .	*32354	Casablanca, Morocco . . .	Do
Ammonia phosphate, bone dust, and synthetic urea . . .	*32561	Sao Paulo, Brazil . . .	Purchase
Bones and hide cuttings . . .	†32394	Hamburg, Germany . . .	Do
Chemicals, industrial and dyes . . .	†32538	Mexico City, Mexico . . .	Agency
Enamels and dry colors . . .	†32487	Caleutta, India . . .	Both
Flavors and extracts . . .	†32538	Mexico City, Mexico . . .	Agency
Insecticides, liquid . . .	*32562	Medan, Sumatra . . .	Either
Paints and varnishes . . .	†32438	Havana, Cuba . . .	Agency
Rosin . . .	*32437	Goteborg, Sweden . . .	Do
Rosin and turpentine . . .	†32436	Hamburg, Germany . . .	Do

A concession has been granted to the Malayan Wood Distillation (Ltd.), Penang, for the manufacture of acetic acid. A plant has been erected at Kranbit, Federated Malay States, where timber lands have been acquired. While construction of the plant has been delayed by floods it is thought that it is now in operation, reports Trade Commissioner Don C. Bliss, Singapore.

Glidden Co. reports May sales totaling \$2,591,963 which compares with \$2,386,938 in May, 1927. For seven months ended May 31, 1928, sales totaled \$15,081,113 as compared with \$14,338,212 in corresponding period of last year.

Robinson Bros. Buffalo Ammonia, Inc., Brooklyn, plans erection of one-story addition to plant, reported to cost about \$90,000 with equipment.

Old Hickory Chemical Co., Nashville, Tenn., purchases 100 acres of land upon which it plans to erect plant for manufacture of carbon bisulfide.

Alabama By-Products Corp. Birmingham, offers \$987,000 first consolidated and refunding six per cent. gold bonds dated Jan. 1, 1925 and due 1955 at 100 and interest.

Aluminum Co. of America calls for redemption on Sept. 1, the \$20,000,000 five per cent. sinking fund debenture bonds dated March 1, 1927.

Some Abstracts from the 1928 Institute of Chemistry

CHEMISTRY in agriculture was the main theme of the opening week of the Second Annual meeting of the Institute of Chemistry, American Chemical Society, which is now in session at Northwestern University, Evanston, Illinois.

Many leading agricultural chemists were among the contributors to the weeks discussion and we summarize below some of the abstracts which are now available for publication.

C. S. Miner, Miner Laboratories, Chicago "Furfural"

The present furfural industry in the United States is the outcome of experimental work undertaken with an entirely different object in view. In the preparation of the popular breakfast food "Quaker Oats", hundreds of tons of oat hulls are produced as a by-product in the milling operation. In spite of the fact that these hulls are used to some extent as cattle food and occasionally as fuel, immense quantities accumulated around the mills. The experimental work mentioned was originally undertaken with the object of increasing the food value of the oat hull. Various methods of chemical treatment were studied one after another until the acid treatment was tried. Then came the discovery; furfural was formed in appreciable quantities. Subsequent investigation showed oat hulls to be eminently suitable for the production of the compound. Persistent research has made it possible to produce furfural at a sufficiently low cost to make it the cheapest aldehyde on the market.

Furfural is very active chemically, is a solvent of wide application, and possesses many properties tending to give it commercial value. It is at present being used very extensively in the manufacture of synthetic resins and moulding compounds. Recently

a light sensitive furfural resin has been produced which is used in the preparation of printing plates.

Because of its germicidal properties and also its fungicidal properties furfural is finding application in the preventing of fermentation in glues and dextrin pastes, as well as in the preparation of disinfectants and deodorizers. Some derivatives of furfural are being used as seed disinfectants and furfural itself is used in the preparation of tree wound dressings.

Research men are constantly working with furfural and its derivatives and undreamed of uses for them are found every day.

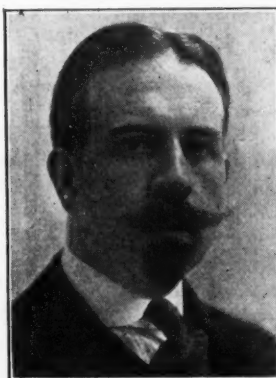
The annual crops furnish an almost inexhaustible, relatively cheap supply of raw material for the production of furfural and as it is a highly reactive compound capable of functioning as the raw material for a wide range of chemical manufacturing processes, it may well form the basis of a branch of American chemical industry comparable in importance to the coal tar industry in Germany.

H. E. Barnard, Indianapolis "The Food Supply of the Future"

Any discussion of the world's future food supply must be confined to definite limits. If by the future we mean the few hundred or thousand years in which the human family, as we know it, will continue to eat the types of animal and vegetable food on which it has grown strong during the counted years of man's history, the problem assumes one form; but if we project this human race hundreds of thousands of years into the future, the discussion will necessarily deal with different sets of conditions, productive of vastly different results. By what right do we assume that a million years from now man will be the same kind of organism he is to-day? He may live differently, he will certainly eat differently. The taste of



Three prominent figures in attendance at the Evanston meeting. Left to right they are: Frank C. Whitmore, director, Institute of Chemistry and head of Chemistry Department, Northwestern



University; Harrison E. Howe, editor, *Industrial and Engineering Chemistry* and Gerald Wendt, director of Chemistry Department, Pennsylvania State College.



good bread and meat may have been forgotten for ages, but his metabolic processes will go on converting elementary substances into body heat and human energy just as satisfactorily as to-day.

The world population is not so much dependent upon the availability of a food supply as of standing room. If the curve showing the increase of population does not flatten out at a date no farther ahead than the Battle of Hastings or the drafting of the Magna Charta lies behind us, there will be hardly more than a square yard of arable land per person. Obviously then the food supply of the future, whether it be synthesized in the laboratory, produced under a highly intensified system of agriculture, or netted from the pastures of the sea, will not be limited by the ability to secure it by a simple application of the law that two objects cannot occupy the same space at the same time.

The sociologist and economist study the Malthusian doctrine very differently from the chemist. They would limit world population to the number of people who can live happily and comfortably under the best living conditions to-day. The chemist is not so much interested in ideal living conditions as in applying scientific law to do the work of the world, no matter whether it is concerned with shelter or food or comfort. The chemist is impatient when he hears the Malthusian doctrine discussed in terms of wheat acreage, or sugars, or fats, for he is confident that when the fertile acres of the earth do not produce crops sufficient for man's needs he can synthesize them in his laboratory. Indeed he is already doing it. When the need comes the chemist will convert the light of the sun and the nitrogen of the air into food for the human family. Thirty men working in a factory the size of a city block can produce in the form of yeast as much food as 1000 men tilling 57,000 acres under ordinary agricultural conditions. To the chemist the Malthusian doctrine is but the sad reflection of a pessimistic world.

George M. Rommel, Pleasantville, N. Y.
"Cellulose Resources on American Farms"

If everything which is produced on the farm could be turned into profit, there would be no farm problem.

The livestock farmer is more successful financially than the one who depends on only one single outlet for his productivity, such as grain alone or cotton alone. He may be a producer of milk or hogs, or fat cattle as a specialty, but he is also a producer of hay and grain, marketing them through his livestock.

The single-crop farmer, on the other hand, incurs a year's outlay of expense in the production of a crop less than half of which he can utilize or find a market for, directly or indirectly.

For every pound of corn grown, about 1½ pounds of corn stover (stalk, leaves, husks and tassel) are produced. For every pound of wheat harvested and threshed, there may be as much as two pounds or more of straw. In growing a crop of cotton, the weight of stalks, leaves and burs is two or three times as

great as that of the seed cotton, the lint and cottonseed comprising the only marketable part of the cotton crop.

The wastes on fruit and vegetable farms are relatively unimportant. The weight of leaves is small and goes back into the soil; no straw or stalks have to be disposed of. The waste from pruning is more than made up in the larger crops of fruit and finer quality which follow intelligent pruning. The truck farmer sells his vegetables, tops and all, or, if he cuts the tops off, leaves a waste behind on the farm which represents only a small proportion of the total weight produced.

It is obvious that, if all the wastes produced on farms in the Mississippi Valley should be fed to livestock, the market for animal product would be oversupplied. The manufacture of these wastes into industrial products such as wall-board, insulating board, cellulose pulp and chemical products therefore looms up as a possible industrial development of the near future.

Careful consideration must be given these questions:

1. How much is the available tonnage in a given area?
2. How much will it cost the manufacturer to assemble them, and what is it worth to the farmer to let them go?
3. How do the costs of these raw materials compare with that of wood?
4. How may the resulting products compare with those from competitive raw materials such as wood, in conversion costs, yields of by-products in manufacturing and quality of finished product?

Prof. O. R. Sweeney, Iowa State College

The Corn Belt as scientists see it is a vast sponge for the absorption of heat units from the sun. These units are stored in chemical compounds from which experts later may extract power as needed and material products for a decentralized industrial system, with the abolition of high costs of distribution and congestion of population.

There is no such sun energy trap as in the Corn Belt anywhere else on earth, certainly not where the white man can live and thrive. American industrialism should be located here, where food for men and eventually constantly renewed energy for man's machines is on tap. The concentration of a vast population on the seaboard is uneconomic. The overhead cost of maintaining such a great mass of people within fifty miles of the City Hall on Manhattan Island, is becoming unbearable, and Los Angeles already shivers, despite climatic advantages, at the prospect of coming thirst.

In the Corn Belt every year hundreds of millions of tons of industrial raw materials go to waste because of the lop-sided location and overcentralization of industries.

All told, in corn stalks, corn cobs, oat chaff, cottonseed hulls, peanut hulls, straw and other such waste, full of the pliant cellulose, from which chemistry can make some 30,000 known industrial products already, there is an annual output of 1,000,000,000 tons of unused raw stuffs, equivalent to twice our annual tonnage of soft coal.

That waste contains the heat units for which we mine coal. For instance, every 100 pounds of corn-cobs contain twenty-four pounds of furfural, a liquid running 7,000 thermal units per pound, capable of taking the job of gasoline, if ever the oil wells run dry.

Not yet cheap enough for fuel, furfural commercially produced at nine cents a pound from the oat chaff is in such demand for its many uses as a solvent, preservative, etc., that constant expansion of production is in progress.

Such an industrial checkerboard would not only give the farmer a market for a billion tons of present waste, but would give him steady employment and create at his gates a vastly enlarged market.

At present people move to the cities to find work in the factories. Entrepreneurs locate factories in the cities because the people that will run the factories are there. This process is like a dot chasing his tail.

That the chemical conversion of farm waste will give the coal barons something to think about is evident. Practically all the synthetic products now made from coal tar and other distillates of coal in the manufacture of by-product coke can be obtained from farm waste. Chemists have stuck their heads too long in the tar barrel.

**Dr. Chas. A. Brown, Bureau of Chemistry and
Soils, Dept. of Agriculture**

The millions of dollars of loss which result to agriculture, and to the industries which utilize the products of agriculture, from spontaneous combustion, dust explosions and similar hazards have opened an important sphere of usefulness to the agricultural chemist.

The chemical engineers of the Department of Agriculture by devising improved appliances for eliminating dust from threshing machines, grain elevators, and other establishments, for removing static electricity as a cause of ignition and for preventing by the use of inert gas the explosions which originate in attrition mills, have greatly reduced the losses from these causes.

With the changing habits in food and dress of the American people there is need of a readjustment in the uses which are made of agricultural products. The per capita consumption of meat and bread has diminished during the past quarter of a century while that of vegetables and sugar has increased.

Changes in style have reduced the per capita demand for cotton in clothing and other instances can be cited of a similar character. Reductions in the use of agricultural materials in one direction, neces-

sitate an expansion of used in another unless there is to be a curtailment in production.

By devising improved methods of utilization chemistry is now playing a role of increasing importance in creating new markets for agricultural products.

Each farm of the United States is a chemical factory in which sunlight, water, carbon dioxide, and various inorganic salts are the raw materials, the operations of plant and animal life the chemical processes, and the products of the farm, such as grain, fruit, vegetables, cotton, sugar, poultry, milk, wool, meat, hides, etc., the final output.

In comparison with the infinitely varied and complex processes of plant and animal chemistry the operations of an industrial chemical factory, such as the manufacture of sulfuric acid or sodium carbonate, are relatively simple.

We have only to reflect upon the very incomplete state of our knowledge concerning the chemistry of cellulose, lignin, starch, proteins, vitamins and the numerous other constituents of crops and animals, or concerning some of the more common processes of plant and animal life, such as photosynthesis or the production of milk in the lacteal gland, in order to realize the immense uncovered distance which agricultural chemistry has yet to travel.

Two fundamental principles, which agricultural chemistry has discovered in the one and a half centuries of its existence, are the law of the minimum and the law of diminishing returns. But these are general laws which apply as much to industry as to agriculture. The last bushel in the yield of wheat and the last pound in the weight of a fattened steer cost the most to produce, similarly the last residue of impurities in a crystallizing salt and the last traces of gold in an ore are relatively the most expensive to remove.

The laws of the same chemistry and of the same economics are operative in both agriculture and industry. If these laws are given equal play in each instance, we may expect the same equally beneficial results. But if the equal operation of these laws is interfered with, either in the one case or in the other, grave disturbances result. The agricultural chemist must become more and more a student of economics.

There is a growing realization among the general public of the great importance of agricultural chemical research to the public welfare.

Cresylic Acid Imports into the United States increased during 1927, when there were entered for consumption 9,136,615 pounds, valued at \$567,802, as compared with 5,702,740 pounds having a value of \$331,550 in 1926, and 2,163,557 pounds in 1925 with a value of \$122,742. Imports of "metacresol, orthocresol and paracresol, purity less than 90 per cent." rose in 1927 to 174,094 pounds valued at \$35,054, an increase of 65 per cent. over the preceding year when 105,238 pounds, valued at \$15,040, were brought in, and five times as much as in 1925 when 34,874 pounds were entered for consumption with a value of \$5,741.

J. T. Baker Chemical Co., Phillipsburg, N. J., plans erection of one-story addition to plant reported to cost more than \$65,000.

Chemical Facts and Figures

Second Institute of Chemistry Convenes at Northwestern Univ.

Session will Continue Until August 18—Sir James Irvine Among Foreign Visitors in Attendance—First Week Devoted to Chemistry in Agriculture—Radio Broadcasts Some Speeches.

Institute of Chemistry, American Chemical Society, opens its second annual session at Northwestern University, Evanston, Ill., July 23. The session is to continue for four weeks, concluding on August 18.

On Monday, July 23, the session opened with addresses of welcome by Walter Dill Scott, president, Northwestern University; S. W. Parr, president, American Chemical Society; Charles L. Parsons, secretary, American Chemical Society; H. E. Howe, director, A. C. S. News Service; B. B. Freud, chairman, Chicago section, A. C. S.; and Frank C. Whitmore, director, A. C. S. Institute. This was followed by a general conference on "Survey of Past and Present Uses of Agricultural Products Other than for Food and Clothing". Discussion was lead by G. M. Rommel, Department of Agriculture; O. R. Sweeney, Iowa State College; H. G. Knight, Bureau of Chemistry and Soils; and Umberto Pomilio, Naples, Italy. The following lectured during the day: H. N. Holmes, Oberlin College, on "General Survey of Colloids"; A. I. Kendall, Northwestern University, on "Outline of Bacterial Metabolism"; V. K. La Mer on "Debye-Huckel Theory of Electrolytes"; and C. A. Browne, on "Some Relations of Agricultural Chemistry to National Prosperity".

The general conference on the second day was devoted to "The Utilization of Corn Grain Other than for Food and Clothing", and was lead by C. L. Gabriel, Commercial Solvents Corp. and H. T. Herrick, Department of Agriculture. There was also round table discussion, lead by Gerald L. Wendt, Pennsylvania State College, on "Effective Utilization of Research". Lecturers of the day included F. C. Whitmore, Northwestern University, on "The Elementary Chemistry Cost"; H. N. Holmes, on "Solvated Colloids" and "Organization of Four-Year Course in Chemistry"; A. I. Kendall, on "Nitrogen Metabolism of Bacteria"; Gukbrand Lunde, University of Oslo, Norway, on "The geochemistry and Circulation of Iodine in Nature"; and Sir James Irvine, University of St. Andrews, Scotland, on "Influence of Chemistry in Modern Civilization".

The general conference on July 25, was on the subject of "Industrial Uses of Various Corn Wastes", and was directed by W. E. Emley, Bureau of Standards; O. R. Sweeney, Iowa State College; and James Slayter, Kalkite Co. Lecturers included W. T. Read, Texas Agricultural College, on "Manufacture of Sulfuric Acid"; H. N. Holmes on "Soaps" and "Research Attitudet of Mind for Freshmen"; V. K. La Mer on "The Dialectic Constant"; A. I. Kendall on "Carbon Metabolism of Bacteria" and Harry A. Curtis, Yale University, on "World Nitrogen Situation".

On July 26, the round table discussion on "Research" lead by Gerald Wendt was continued. "Utilization of Hulls and Straws" formed the subject for the general conference lead by C. S. Miner, Miner Laboratories; and W. F. Emeley, Bureau of Standards. Lectures included W. T. Read on "Nitrogen Fixation"; H. N. Holmes on "Emulsions" and "The Gifted Student in Chemistry"; A. I. Kendall on "Action of Bacteria on Sugars"; B. S. Hopkins, University of Illinois, on "Elements Known to the Ancients" and H. E. Barnard, on "The Food Supply of the Future".

Sir James Irvine lead the round table discussion Friday. The subject was "The Chemistry of Cellulose". The general conference was on "Cellulose in Relation to Agriculture" and

those participating were A. W. Schorger, Burgess Laboratories; L. F. Hawley, Forest Products Laboratories; G. A. Wichter, The Brown Co.; R. L. Stern and J. K. Speicher, Hercules Powder Co.; and Van L. Bohnson, du Pont Rayon Co. Lectures included W. T. Read on "Industrial Chemistry of Water"; H. N. Holmes on "Absorption of Gases" and "Lecture Style"; A. I. Kendall on "General Survey of Commercial Fermentations"; G. J. Esselen, Jr., "Cellulose In Industry"; E. C. Lathrop, Celotex Co., on "Cellulose"; B. S. Hopkins on "Elements Discovered by early Scientific Workers"; V. K. La Mer on "New Concepts of Acids and Bases"; and R. W. Thatcher, Massachusetts Agricultural College, on "Development of Agricultural Research".

The two general conferences were held July 28. The first dealt with "Research on Agricultural Products" and was lead by H. G. Knight, Bureau of Chemistry and Soils. The second was on "Agriculture and Commodity Competition" and was lead by Harrison E. Howe, *Industrial and Engineering Chemistry*. Lectures included W. T. Read on "Hydrocarbons"; H. N. Holmes on "Absorption of Liquids" and "Welfare of the Staff"; A. J. Walcott, Northwestern University, on "Crystallography Usefull to Chemists"; A. I. Kendall, on "Bacteriology"; B. S. Hopkins on "Discovery of Oxygen"; and G. J. Esselen, Jr., on "Relation of Cellulose to Civilization".

Those who lectured Monday, July 30, included H. N. Holmes on "Teaching Colloid Chemistry"; V. K. La Mer on "The Salting-Out Effect"; W. T. Read on "Applied Electrochemistry"; J. G. Lipman, New Jersey Agricultural Experiment Station, on "Plant Nutrition"; W. T. Read on "Unit Chemical Engineering Operations" and W. L. Kendall on "Some Aspects of Anaphylaxis".

In addition, the program included visits to nearby industrial plants, motion pictures of various industries and processes involving chemistry, mixers, garden parties, and other social functions. Many of the lectures were broadcast through station SCX.

Economic Symposium on Nitrate a Feature of Fall A. C. S. Meeting

First meeting of Economic Section, American Chemical Society, will be held in conjunction with the Fall meeting of the Society at Swampscott, Mass., the week beginning Monday, September 10th.

The economic section meeting will be conducted Wednesday, September 12 and will consist of an economic symposium on nitrogen. The committee has gathered together an impressive group of speakers to discuss this subject of paramount importance to the industry. The speakers and the topics which they will discuss are: Jasper E. Crane, president, Lazotte, Inc. "The New Place of nitrogen in Chemical Elements"; E. M. Allen, president, Mathieson Alkali Works, "Synthetic Ammonia"; H. R. Bates, manager, Manufacturing Dept., International Agricultural Corp., "Economic Relationship between Nitrogen and Fertilizers"; Chas. J. Ramsburgh, vice-president, Koppers Co., "Nitrogen By-Products" and Dr. Walter S. Landis, vice-president, American Cyanimid Co., "The International Nitrogen Problem".

Committee in charge of the symposium consists of E. M. Allen, John E. Teeple, Walter Teagle, president, Standard Oil Co. of New Jersey, John J. Watson, president, International Agricultural Corp, Dr. McKay, International Nickel Co., chairman Industrial Division, American Chemical Society, under whose auspices the symposium will be held, and Williams Haynes, publisher, *CHEMICAL MARKETS*, chairman of the section.

Personal and Personnel

Carson W. Simms severs connection with lacquer research laboratory, Commercial Solvents Corp. Associated with G. N. Maxwell, he has organized the Wabash Products Co., Terre Haute, Ind., to produce lacquers for the automobile and furniture industries as well as various industrial specialties.

Daniel S. Green, vice-president, Henry Heil Chemical Co., St. Louis, dies at his home in that city July 17, aged 69. He entered the employ of the company forty-four years ago as a clerk, later became its secretary, and after the death of Henry Heil was made vice-president.

Mrs. Margie A. Smith, widow of the late Dr. Edgar Fahs Smith, presents his collection of chemical memorabilia to the University of Pennsylvania. The collection will be known as "The Edgar Fahs Smith Memorial Collection in Historical Chemistry."

Sir James Irvine, principal and vice-chancellor, St. Andrews University of Scotland, in an interview at the Institute of Chemistry meeting at Evanston, Ill., advises that the United States continue to develop poisonous gases for chemical warfare.

Allan Brown, Bakelite Corp., is elected vice-president, National Industrial Advertisers' Association. Among the directors for 1929 are D. J. Benoliel, International Chemical Co., and C. B. Smith, American Tar Products Co.

Grant B. Shipley, chairman of the board and president, American Mond Nickel Co., Pittsburgh, and president, Century Wood Preserving Co., Pittsburgh, is elected a director of Mond Nickel Co., Ltd., England and Canada.

Charles F. Guignanon, for past ten years New York manager, Gillican-Chipley Co., naval stores, New Orleans, will in the future operate under his own name as sales agent for that company in the same territory.

Henry G. Perry, for many years associated with Cook, Swan & Young Corp., New York, becomes manager of the oil department, Irving R. Boody & Co., Inc., also of New York.

Herbert B. Johnson, formerly engaged in research work, engineering and sales management at Arlington, Mass., becomes associated with American Cyanamid Co., New York.

John J. Raskob, vice-president and member of the finance committee, E. I. du Pont de Nemours & Co., Inc., is appointed chairman, Democratic National Committee.

Horace W. Davis, president, Agfa Ansco Corp., Binghamton, N. Y., is in the City Hospital there, suffering from erysipelas.

E. T. Eichelberger is elected treasurer, Standard Wholesale Phosphate & Acid Works, succeeding L. J. Blakey, resigned.

O. A. Hasse, executive vice-president and director, Glidden Co., resigns to become associated with Valentine & Co., Inc.

Martin A. Towle, long associated with Peter B. Bradley, commercial fertilizers, Boston, dies July 31, at Hull, Mass.

L. W. Ryan is appointed director of research of the new laboratory of Titanium Pigment Co., Inc., Brooklyn, N. Y.

Robert Kunze, co-director, N. V. Potash Export My., New York, sails for Europe, July 14.

Union Carbide Buys Acheson Graphite; Atchison Smith Retained as President

Union Carbide & Carbon Corp. concludes agreement under which it will acquire all the common stock of Acheson Graphite Corp. in exchange for shares of its own stock. All holders of the common stock have signed this agreement and the exchange will probably take place within the next thirty days.

The Acheson company owns a manufacturing plant at Niagara Falls with an annual output of about 45,000,000 pounds of graphite in powdered and electrode form. Stock capitalization consists of \$1,000,000 of 7 per cent. cumulative preferred stock and 250,000 shares of no par common. This business has been in successful operation for the past thirty years and was started by Dr. Edward G. Acheson at Niagara Falls, N. Y., and its products are widely sold in both domestic and foreign markets.

Management and policies of Acheson Graphite Corp. will, in the main, continue as heretofore. Atchison Smith, president Acheson Graphite Corp., is to remain as president and Dr. Edward G. Acheson, inventor and founder of the company, will be chairman of the board.

Mumford Leaves Commercial Solvents

Philip G. Mumford announces retirement, to take effect September 1, as president, Commercial Solvents Corp., after serving for past six years. Although he plans to continue his connection with the Solvents company as vice-chairman, board of directors, he will devote most of his attention to banking and on October 1 will become a general partner of William Schall & Co., with whom he has been associated as special partner for over a year.

His duties with Commercial Solvents will be taken over by William D. Ticknor, chairman, who was president in 1922 before Mr. Mumford was named.

United States Tariff Commission holds preliminary hearing, July 25, in Washington, on application of Royal Baking Powder Co., New York, for increased tariff duties on cream of tartar and tartaric acid. Exchange of briefs took place between interested parties August 6, and September 17 has been fixed as date for final briefs. American producers represented were, in addition to Royal Baking Powder Co., Harshaw, Fuller & Goodwin Co., Cleveland; American Cream of Tartar Co., San Francisco; and Charles Pfizer & Co., New York. William Neuberg, New York agent for German and Italian producers, and Joseph L. Warner, purchasing agent, Bristol-Meyers Co., a large consumer, testified against an increase in tariff.

It is reported that the Chilean Government and the Nitrate Producers' Association are trying to devise some selling scheme which will eliminate the rate-cutting competition in consuming markets between consigning producers and importers that has been the feature during the last few months, and which by continually falling prices and resultant losses has caused many of the distributors to lose interest in the commodity. Another report states the Government has requested the Producers' Association to prepare and submit within 30 days a scheme for the centralization of sales which will include both producers and importers.

Standard Fertilizer Co., subsidiary of Standard Wholesale Phosphate & Acid Works, Baltimore, operating plant at Williamston, N. C., plans construction of second unit at Williamston with 11,000 tons storage capacity.

Board of Health, City of New York, rescinds order issued October 30, 1924, prohibiting sale of ethyl gasoline in that city until an investigation had proved that its use was not harmful to human life.



Acetanilid

Bismuth Salts

Codein and its Salts

Ethyl Morphine

Iodoform

Opium, U. S. P.

Potassium Iodide

Quinine and its Salts

Thymol Iodide

Strychnine and its Salts

Morphine and its Salts

Menthol-Y

New York Quinine and Chemical Works, Inc.

99-117 No. 11th Street, Brooklyn, N. Y.

St. Louis Depot: 304 S. Fourth Street

Tri Sodium Phosphate

Free Running
Non-Caking

Carbon Tetrachloride

Water White
Double Distilled

Carbon Bisulphide

99.9%
Water White



THE WARNER CHEMICAL COMPANY
415 Lexington Avenue, New York

Brundage Appointed Sales Manager By Solvay To Succeed H. G. Carrell

E. F. Brundage, formerly assistant sales manager, is appointed sales manager, Solvay Sales Corp., New York, to succeed the late H. G. Carrell. He also succeeds Mr. Carrell as vice-president, United States Alkali Export Association.

Mr. Brundage is a graduate of Worcester Institute of Technology, graduating in 1904 with the degree of A. B. The next five years were spent as a chemist with the American Smelting & Refining Corp. In 1909, he left to become associated with the General Chemical Co., first as superintendant of the Baltimore plant and later in charge of Southern sales, with headquarters in Baltimore. In 1922, he became assistant sales manager, Solvay Sales Corp., from which position he was promoted to that of sales manager at Mr. Carrell's death.

Amer. Linseed Sells Linseed Business

Directors of American Linseed Co. approved the sale of its active linseed properties and its inventories by the sale of one-half to Spencer Kellogg & Sons and one-half to Archer-Daniels-Midland Co. Each of these companies will operate the properties purchased for its own account from and after July 14, 1928, and the American Linseed Co. as a corporation has definitely gone out of the linseed oil business as of the above mentioned date.

American Linseed Co. carried its plants on its books at approximately \$4,695,000. Properties were located in Staten Island, N. Y., Buffalo, Boston, Chicago and St. Paul, and are equipped to crush about 5,000,000 bushels of linseed annually.

W. R. Grace & Co., Inc., New York, opens a nitrate of soda sales office in Baltimore under management of William C. Geoghegan. The latter is well known in the fertilizer trade. He was manager of the New Orleans office of the German Kali Works, from 1909 until the war. He then became associated with the Hubbard Fertilizer Co., Baltimore, and in 1923 became manager of the Baltimore office of the Potash Importing Corp., until July 1 when he became associated with W. R. Grace & Co.

Industrial Alcohol Institute announces that combined inventories of all members on June 30, 1928 amounted to 9,438,496 wine gallons, or 4, 589,717 gallons, or 48 per cent. less than on the corresponding date of last year. Members of this Institute, fourteen in number, with combined capitalization in excess of \$100,000,000 are producing 97 per cent. of the 85,000,000 gallons of industrial alcohol set as a maximum for production during 1928.

Hooker Electro-Chemical Co., New York, begins construction of \$1,000,000 plant at Tacoma, Wash. New plant will be the Northwest branch of the Hooker company. Original operations of the plant will probably be limited to manufacture of caustic soda and liquid chlorine, but its construction is being planned along such lines that expansion into other fields will be possible as soon as justified by market conditions.

Chemical Division, United States Tariff Commission adds following chemists to its staff: Harold F. Shattuck, formerly with Monsanto Chemical Works and Dow Chemical Co.; George M. Cunningham; and Prof. E. E. Stanford, College of the Pacific, Stockton, Cal.

Cornstalk Products Co., Danville, Ill., produces first commercially used paper made from the pulp of corn stalks which is to be seen in George M. Rommel's book, "Farm Products in Industry", published July 25 by Rae D. Henkle Co.

National Aniline & Chemical Co., Inc., announced new acid black, National Buffalo Black GRF Conc.

News of the Companies

United States Gypsum Co. purchases 32-acre site at East Chicago Ind., on which it will erect a gypsum factory, one of four planned by the company at water ports. Total cost of the project was not disclosed, but price paid for site was reported at \$170,000. Other water port plants in process of construction, or soon to be started, are at Boston, Philadelphia and Detroit.

National Oil & Supply Co., Newark, suffers slight damage in storm, July 10, at which time the three-story office building at the plant was struck by lightning, setting fire to the roof and sending about 100 employees into the street. The blaze was extinguished with but slight damage by firemen and the rain which accompanied the storm.

Monsanto Chemical Works purchases additional property immediately south of present plant in St. Louis to provide for future expansion of fine and medicinal chemical manufacturing plant.

Brown Linseed Corp., Port Richmond, Staten Island, recently formed by G. W. Brown, former plant manager, Arther-Daniels-Midland Co., begins production of linseed oil August 1.

Plant of Cream of Tartar Co. of Australia is reported to be in operation at Granville. A monthly production of 100 tons each of tartaric acid and cream of tartar is planned.

Imperial Chemical Industries, Ltd., concludes agreement, with government of Nova Scotia by which the company will investigate potash deposits in the province.

Le Roy Salt Co., Le Roy, N. Y., merges with Watkins Salt Co., Watkins Glen, N. Y., and hereafter business will be carried on under name of latter company.

Barrett Co., New York, is appointed sales agent for the anhydrous ammonia to be produced at Hopewell, Va., plant of Allied Chemical & Dye Corp.

D. H. Litter & Co., Inc., New York, now represents the Louisiana Pine Products Co., Shreveport, La., on pine tar and pine tar oil.

Tennessee Eastman Corp., Kingsport, Tenn., publishes illustrated booklet containing descriptive survey of plant and operations.

Proctor & Gamble Soap Co. is rumored to have leased the plant at Marcus Hook, Pa., occupied by the National Aniline Co. during the World War.

Washington Chemical Corp., Washington, D. C., announces appointment of M. J. Blanke as general sales and advertising manager.

Air Reduction Co., Inc., New York, acquires all assets of Ohio Oxygen Co., with oxygen manufacturing plant at Niles, Ohio.

Marley Chemical Co. leases one-story building in Jersey City, N. J., formerly occupied by Motive Parts Corp.

American Cyanamid Co. places an order for 20 hopper cars with the General American Tank Car Corp.

Rossville Co., Inc., announces removal to new quarters at 68-35 St., Brooklyn, N. Y.

Missouri-Kansas Zinc Corp. acquires Kansas Zinc Mills Corp. of Missouri.

Etman Joins J. T. Baker Chemical Co.

Louis D. Etman, formerly assistant manager, Powers-Weightman-Rosengarten Co., New York, becomes associated with J. T. Baker Chemical Co., Phillipsburg, N. J. He was born in New



Lebanon, N. Y., July 30, 1878 and is well known in the drug and chemical trade, having been connected with it ever since his graduation from high school. His first business experience was gained in the retail drug store of R. E. Willard & Son, Pittsfield, Mass., where he spent ten years. For the next eleven years he was salesman for Schieffelin & Co., New York. He left the latter company to become assistant manager in charge of the export department of Powers - Weightman-Rosengarten Co., in which capacity he again spent eleven

years. He is a member of the Masonic Fraternity and of the Drug & Chemical Club, New York.

Canadian imports of aniline and other coal tar dyes during 1927 showed a gain both in quantity and value. Shipments from the United Kingdom and France were somewhat less, but this loss was more than offset by increased imports from the United States, Germany and Switzerland. Imports of coal tar base or salt, including such products as beta-naphthol and sulfur colors from the United States, dropped to about one-half the quantity imported in 1926, but the total value did not show such a great diminution; imports from Germany increased about five times. There was a gain in the quantity of camwood and sumac and its extracts and a slight drop in the value of imports, indicating lower prices. Chemical compounds for dyeing and tanning were imported in larger quantities.

Piedmont section, American Association of Textile Colorists and Chemists, holds summer meeting at George Vanderbilt Hotel, Asheville, N. C., July 21. Among the speakers were Carl C. Poindexter, Chatham Manufacturing Co., on "Dyeing and Finishing of Woolen Blankets"; Burton F. Mitchell, American Yarn & Processing Co., "Preparation of Yarn for the Knitter"; Prof. Thomas Nelson, N. C. State College of Agriculture and Engineering, "Research and Testing"; and Robert W. Griffith, Champion Fibre Co., on "The Forest and Industry".

Imports of butanol into the United States for the past six years have been as follows: 1922, 7 lbs. valued at \$5; 1923, 9,699,112 lbs., valued at \$186,352; 1924, 404,882 lbs., valued at \$97,861; 1925, 2,512,092 lbs., valued at \$392,770; 1926, 205,317 lbs., valued at \$33,237; and 1927, 31,751 lbs., valued at \$5,569.

Northwest Fertilizer Association is organized July 12 at Vancouver, B. C. Officers are president, Frank Leckenby, Chas. H. Lilly Co., Seattle; vice-president, Walter Ray, P. Burns & Co., Ltd., Vancouver; and secretary-treasurer, Mac Taylor, Magnolia Fertilizer Co., Seattle.

Carnegie Institute of Technology, Pittsburgh, announces a program of fourteen research studies in coal mining and metallurgy during 1928-29.

Atmospheric Nitrogen Co. announces that first unit of its atmospheric nitrogen plant at Hopewell, Va., will be completed by January 1.

American Manganese Producers Association will hold annual meeting at Mayflower Hotel, Washington, D. C., September 10 and 11.

German Nitrogen Prices Are Practically Unchanged This Year

German Nitrogen Syndicate has announced its prices for synthetic nitrogenous fertilizers, effective on July 1, 1928 for the next fertilizer year, which runs from July 1, 1928 to June 30, 1929.

Prices remained practically unchanged with a few slight exceptions. Ammonium sulfate and the other fertilizers placed on the same basis for the period from September to December are one pfennig per kilo fixed nitrogen content lower than in the corresponding period of the last fertilizer year. The price for October for calcium cyanamide is two pfennigs per kilos nitrogen content lower than in the same month of the preceding fertilizer year. The following table shows prices in marks per one kilo of fixed nitrogen:

	Ammonium sulfate		Leuna saltpeter		Potash ammonium	
	Nitrate		Calcium		Ammonium Calcium	
	Urea		Cyanamide		Chloride Ammonium	
	1927-28	1928-29	1928-29	1928-29	1928-29	1928-29
July.....	0.85	0.85	0.78	0.78	0.83	0.83
August....	0.86	0.86	0.80	0.79	0.84	0.84
September..	0.88	0.87	0.81	0.80	0.85	0.85
October....	0.90	0.88	0.81	0.81	0.86	0.86
November..	0.90	0.89	0.83	0.82	0.87	0.87
December...	0.92	0.91	0.85	0.84	0.89	0.89
January....	0.94	0.94	0.87	0.87	0.92	0.92
February to						
June.....	0.95	0.95	0.88	0.88	0.93	0.93

Rates on fertilizer and fertilizer materials between points in central territory have been prescribed, effective October 5, by the Interstate Commerce Commission on a distance scale that is generally lower than the scale originally established for this traffic in the previous decision in docket 15912, a proceeding on complaints of the Ohio Farm Bureau Federation, the National Fertilizer Association and Armour Fertilizer Works.

The scale prescribed in the original report ranged from 6 per cent. per 100 pounds for a distance of ten miles up to 33.5c per 100 pounds for 800 miles. The modified scale ranges from 5c for ten miles to 29.5c for 800 miles.

Each year the students of Textile High School, New York, most proficient in certain phases of work intimately connected with the science of textile production, are awarded prizes donated by the Hon. Herman A. Metz.

Following this custom, the Metz awards for 1928 were received by William Rothman, first, and Richard Glassman, second, in Chemistry and Dyeing. The first prize in Batik and Dyeing was won by Edward Faunig; second prize, by Beatrice Shutard.

Japanese Bleaching Powder Association decides to retain its 20 per cent. output restriction for June. Japanese production of bleaching powder and caustic soda for first four months of 1928 amounted to 28,103,770 lbs. and 19,913,601 lbs. respectively. This compares with 26,928,720 lbs. and 19,344,284 lbs. for same period of previous year.

E. I. du Pont de Nemours & Co. takes over from Rhodia Chemical Co., New York, exclusive sales agency for cellulose acetate produced by Societe Chimique Usines du Rhone, France. Later it is expected that the company will manufacture cellulose acetate under the patents and processes of the French company.

Manville mills of Manville-Jenckes Co., employing about 2,000 operatives, go on 54-hour weekly schedule. Plant, manufacturing cotton and rayon mixtures, has been operating on 48-hour schedule.

1929 Industrial Alcohol Quota Tentatively 10% Higher Than 1928

Bureau of Prohibition has practically decided to fix 185,000,000 proof gallons as the allowable industrial alcohol output for the year 1929 according to an oral announcement July 17 by Commissioner of Prohibition, Dr. J. M. Doran, who qualified his statement, however, with the observation that the amount would be changed if requirements of industry increase in the next few months. The decision of the Commissioner will be based, as it was last year, on figures submitted voluntarily by the trades as to the needs of business.

Should conditions remain unchanged, it will mean that the maximum to be produced next year will be the same as allocated for the current year. Dr. Doran said the supply on hand is adequate.

Swiss-German Dye Combine Seen

Societe Internationale pour Enterprises Chimiques is organized at Basle, Switzerland, with capital of 20,000,000 francs by the German and Swiss synthetic organic chemical combines, according to the Department of Commerce. Although definite statements regarding the purpose of the new company have been promised by the I. G. Farbenindustrie, none have as yet been issued.

Local Berlin opinion emphasizes this development to the extent of characterizing it as a new basis for resumption of international chemical negotiations, but this may be taken with reserve. However, considering the European dyes situation, a Swiss-German dyestuffs agreement on production and sales may reasonably be expected as a sequel to the formation of this new company. It is also logical to expect the acquisition by the Societe Internationale pour Enterprises Chimiques of additional shares in other leading European chemical concerns, notably French and Italian, without affecting current international chemical cartel agreements such as the Franco-German dye pact.

Newport Chemical Works, Inc., Passaic, N. J., issues leaflets describing new dye products developed by the company and containing swatch bows showing the shades of these colors on various materials. The colors so described are: Anthrene Bordeaux B Paste, Anthrene Brown RA Paste, Anthrene Orange RC Paste, Anthrene Brilliant Blue R Paste, Anthrene Yellow AG Double Paste, Newport Fast Chrome Brown PG, Newport Acid Anthraquinone Blue SKY, Newport Acid Anthraquinone Violet R, Newport Rhodamine B Extra, Newport Light Fast Wool Red BL Conc., Newport Light-Fast Yellow 5GL, and Newport Diazo Fast Blue NA.

Standard Wholesale Phosphate & Acid Works, Curtis Bay, is erecting a second direct contact unit which according to plans will be ready to produce acid in about four months. First unit uses a vanadium mass, while this second unit will employ a platinum mass.

Textile Color Card Association, Inc., publishes the 1928 Fall Season Color Card of America, forecasting the season's color development and supplementing the Standard Color Card of America, containing 192 staple colors.

Granting claim of Lo Curto & Funk, New York, U. S. Customs Court finds that copper thiocyanate is entitled to free entry under paragraph 1565, and not at 25 per cent. ad valorem under paragraph 5.

May production of crude methanol was 559,604 gallons, as compared with 607,253 gallons in April and 636,376 gallons in May, 1927.

American Red Cross announces its Annual Roll Call to be held as usual from November 11 to 29, to enroll members for 1929.

Spanish-Italian Mercury Combine

After lengthy negotiations Italian mercury producers and the Spanish Government have reached an agreement to regulate production, according to Assistant Commercial Attache A. A. Osborne, Rome.

The agreement provides for the institution of a sales office, handling the production of both Italy and Spain, to be set up in some European country not yet designated. Output allotments in proportion to mining capacities will be sub-divided among the governments-controlled Idria mines and the private operators—Monte Amiata, Siele and minor companies.

The first task to be undertaken will be to dispose of considerable stocks in Italy and Spain which have been accumulated in the past year, when there was a heavy output and in Italy diminished exports. As a first measure, both Italian and Spanish output will be reduced.

The Italian Superior Mining Council has approved the provisions of the agreement outlined.

Public Service Commission, New York, approves new freight rates as follows:

Erie Railroad on sulfuric acid in tank cars, carload from Black Rock, Buffalo, and East Buffalo to North Tonawanda 7c, reduction 1c per cwt. Effective August 22.

Ulster & Delaware Railroad, fertilizer materials (numerous articles) carload, from Rondout station, Kingston and Oneonta to stations on its lines. The reductions are effective August 21.

New York Central (east) on Potash (caustic liquor) in iron drums, carload minimum weight 50,000 pounds, and in tank cars, carload from Solvay and Syracuse to Boston and Albany stations; Canaan to Hudson Upper inclusive and Chatham Center to Brookview inclusive, 25c, reduction 6c per cwt, effective August 20.

Plea for a stay of injunction in suit brought by U. S. Gypsum Co. against American Gypsum Co. of Port Clinton, Ohio, is denied by Judge John Paul Jones in U. S. District Court, Cleveland. Suit was brought for alleged patent infringement in manufacture of gypsum wall board, and Judge Jones ordered American Gypsum Co. to cease manufacture of the type of wall board covered by the patent by August 9.

Decision in favor of U. S. Gypsum Co. was handed down by Judge Jones on July 2, when he ordered the case to a master in chancery for determination of money damages. Litigation prior to the decision had been in effect since 1921.

J. Ward Motte, president, J. Ward Motte & Co., naval stores, Savannah, dies suddenly at his home in that city, July 11, aged 57. He was born in Cheraw, Chesterfield county, Ga., and spent his entire life in the naval stores business. He was president, Producers' Naval Stores Co. and the Blue Creek Company, and for several terms had been director of public works for the City of Savannah.

Carpenter-Morton Co., Boston, announces appointment of Silvanus Smith as sales manager. He has been associated with the company for twenty-seven years, is one of the directors, and also a former president of the Paint Trade Salesmen's Club of New England.

E. I. du Pont de Nemours & Co., Inc., concludes license agreement with General Electric Co. under which it is given certain exclusive rights to the use of glyptal resin in the furniture and automotive field and certain non-exclusive rights in other fields.

R. B. French, in charge of glycerin sales in the eastern district, Harshaw, Fuller & Goodwin Co., Cleveland, sails July 23, on the S. S. "Evangeline" for two weeks in Nova Scotia.

Leslie M. Brown, formerly with Radel Leather Manufacturing Co., Newark, is appointed sales manager, tanning oil division, National Oil Products Co., Harrison, N. J.

The Financial Markets

DuPont Income For 1st Half 1928 Yields Earnings of \$11.32 Share

Income Amounts to \$32,696,782—This Compares with \$23,834,209 or \$8.05 a Share for 1st Half 1927—Income from General Motors and U. S. Steel Stock Boosts Income Considerably.

Report of E. I. du Pont de Nemours & Co. for six months ended June 30, 1928, shows consolidated net income of \$32,696,782 after interest, federal taxes, etc., equivalent after debenture dividends, to \$11.32 a share earned on 2,661,658 shares of no-par common stock. This compares with \$23,834,209 or \$8.05 a share on common in first half of 1927.

For June quarter net income was \$11,182,584 after above charges equal to \$3.69 a share, comparing with \$21,514,198 or \$7.63 a share in preceding quarter and \$8,375,942 or \$2.70 a share in second quarter of preceding year.

Profit and loss surplus on June 30, 1928, was \$124,472,266 comparing with \$95,407,964 on June 30, a year ago.

Consolidated income account for six months ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Oper inc. . . .	\$10,309,575	\$7,735,888	\$7,592,520	\$6,725,484
Ine G.M. inv . .	19,967,728	15,969,331	11,313,773	3,955,388
Other inc. . . .	3,502,083	893,942	3,516,719	1,481,476
Total inc. . . .	\$33,779,386	\$24,599,161	\$22,423,012	\$12,162,348
Fed taxes. . . .	1,039,841	720,990	620,549	551,727
Interest.	42,763	43,962	45,150	638,888
Net inc.	\$32,696,782	\$23,834,209	\$21,757,313	\$10,971,733
Deb divs.	2,571,657	2,397,567	2,441,929	2,052,591
Com divs.	24,619,443	18,630,615	13,306,327	4,752,388
Surplus.	\$5,505,682	\$2,806,027	\$6,009,057	\$4,166,754
†Prev surp. . .	97,785,244	66,417,566	62,669,541	55,881,491
Reval G. M. invest.	19,962,440	26,184,371	.....	36,285,893
Sale of addit debt stock. .	1,218,900	.....	.....	.....
Ttl surp. . . .	\$124,472,266	\$95,407,964	\$68,678,598	\$58,314,778
Com stk div appro. . . . .	.....	.....	.....	38,019,360
P&L surp. . . .	\$124,472,266	\$95,407,964	\$68,678,598	\$58,314,778

†Surplus at beginning of year. *Includes approximately \$2,000,000 received from government on account of refund to taxes overpaid for the year 1915 to 1924, inclusive. †Includes approximately \$2,286,000 profit from sale of 114,000 shares of U. S. Steel common stock.

Mathieson Six Months Earnings Up

Mathieson Alkali Works, Inc., for quarter ended June 30, 1928, reports net income of \$556,666 after depreciation, depletion, federal taxes, etc., equivalent after allowing for dividends on 7% preferred stock, to \$3.49 a share earned on 147,207 shares of no-par common stock. This compares with \$429,463 or \$2.62 a share in preceding quarter and \$452,429 or \$2.78 a share in second quarter of 1927.

Net income for six months ended June 30 totaled \$986,130 after above charges, equal to \$6.11 a share on common against \$898,698 or \$5.51 a share in first half of preceding year.

Income account for quarter ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Total earn. . . .	\$859,341	\$734,032	\$654,084	\$587,975
Depr, depl., etc.	236,595	219,613	207,156	164,472
Fed Tax prov. . .	66,080	61,990	55,054	45,753
Net inc.	\$556,666	\$452,429	\$391,874	\$377,750
Six months ended June 30:				
Total earn. . . .	\$1,595,912	\$1,457,487	\$1,283,041	\$1,174,762
Depr., depl., etc.	476,930	435,893	396,959	330,748
Fed tax prov. . .	132,852	122,896	109,926	90,612
Net inc.	\$986,130	\$898,698	\$776,156	\$753,403

Commercial Solvents Profits For Second Quarter of 1928 are Higher

Commercial Solvents Corp. reports for quarter ended June 30, 1928, net profit of \$625,514 after depreciation, federal taxes, etc., equivalent to \$2.87 a share earned on 217,722 shares of no par stock. This compares with \$575,726 or \$2.64 a share in the preceding quarter and \$688,923 or \$6.33 a share on 108,861 Class B shares in second quarter of 1927.

Net profit for the first six months of 1928, amounted to \$1,201,240 after above charges, equal to \$5.51 a share on 217,722 shares of stock against \$1,215,022 or \$11.16 a share on 108,861 shares of Class B stock outstanding in first half of previous year.

Income account for quarter ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Oper profit.	\$777,021	\$932,660	\$619,523	
Other income.	28,129	16,252	31,416	
Total income.	\$805,150	\$948,912	\$650,939	
Other deduct.	62,221	82,377	196,276	
Federal Taxes.	117,415	177,612	88,241	
Net profit.	\$625,514	\$688,923	\$366,422	
Income account for six months ended June 30, 1928, compares as follows:				
Oper profit. . . .	\$1,508,709	\$1,603,298	\$1,073,245	\$578,031
Other income. . .	43,231	34,662	59,391	2,118
Tot inc.	\$1,551,940	\$1,637,960	\$1,132,636	\$580,149
Other deduct. . .	120,838	124,187	275,471	\$39,443
Fed taxes.	229,862	298,751	168,853	59,635
Net profit.	\$1,201,240	\$1,215,022	\$688,312	\$281,071

National Aniline & Chemical Co., Inc., files report with the Massachusetts commissioner of corporations as of Dec. 31, 1927, showing surplus of \$6,905,215. The report follows:

Assets: Fixed capital (net), \$5,159,414; current assets, \$12,332,385; investments, \$103,801; other assets, \$9,730,149; total assets, \$27,325,749.

Liabilities: Common stock, \$2,000,000; current liabilities, \$15,817,869; reserves, \$2,602,665; surplus, \$6,905,215; total liabilities, \$27,325,749.

Carbide Earns \$2.20 For Quarter

Union Carbide & Carbon Corp. and subsidiaries report for quarter ended June 30, 1928, net profit of \$5,868,610 after interest, taxes, depreciation and preferred dividends of subsidiaries, equivalent to \$2.20 a share earned on \$2,659,733 shares of no-par stock. This compares with \$6,004,132 or \$2.25 a share in preceding quarter and \$4,862,523 or \$1.82 a share in second quarter of 1927.

Net profit for first six months of 1928, totaled \$11,872,742 after above charges, equal to \$4.46 a share against \$10,208,852 or \$3.83 a share in first half of previous year.

Consolidated income account for quarter ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Net aft fed tax.	\$8,210,215	\$7,077,033	\$6,426,784	\$5,347,448
Int & sub pfd divs	295,241	298,724	304,671	256,702
Deprec, etc.	2,046,364	*1,915,786	1,872,127	1,800,381
Net profit.	\$5,868,610	\$5,862,523	\$4,249,986	\$3,290,365

Devoe & Raynolds Profits \$606,557

Devoe & Raynolds Co., Inc., and subsidiaries, report for six months ended May 31, 1928, profit of \$606,557, after expenses and charges but before federal taxes, comparing with \$541,805 in first half of previous fiscal year. Outstanding stock consists of \$1,716,100 first preferred, \$935,500 second preferred, 95,000 shares of no-par Class A common, and 40,000 no-par shares of Class B common stock.

Consolidated income account for six months ended May 31, 1928, compares as follows:

	1928	1927	1926	1925
Net sales.	\$6,885,561	\$6,409,851	\$5,533,507	\$5,938,419
Costs & exp.	6,203,457	5,781,244	4,854,805	5,193,746
Oper prof.	\$682,104	\$628,607	\$678,702	\$744,673
Other inc.	47,567	53,858	56,016	49,648
Total inc.	\$729,671	\$682,465	\$734,718	\$794,321
Disc, misc adj, etc.	123,114	140,660	111,162	115,070
*Profit.	\$606,557	\$541,805	\$623,556	\$679,251

*Before federal taxes.

By-Products Coke Corp. reports for quarter ended June 30, 1928, profit of \$403,722 after interest and depreciation but before federal taxes, comparing with \$366,736 in preceding quarter and \$211,905 in second quarter of 1927. Company has outstanding 189,936 no-par shares of stock.

Profit for first six months of 1928, totaled \$770,458 before taxes, against \$648,175 in first half of preceding year.

Virginia Carolina Chemical Corp. declares an initial \$3 dividend on the 6% participating preferred and also the regular quarterly dividend of \$1.75 on prior preferred, both payable September 1 to stock of record August 17.

The dividend on the 6% participating preferred was against accumulation from July 1, 1927, to June 30, 1928.

Courtaulds, Ltd., announces an interim dividend, payable Aug. 3, of 1s on £24,000,000 or ordinary capital stock, compared with 1s 6d on £12,000,000 last year. This represents a disbursement of £1,200,000 against £900,000,

Imperial Chemical Industries, Ltd., new issues of 3,363,855 £1 common shares and 2,242,570 10's deferred were oversubscribed to extent of £11,000,000.

Freeport Texas Income is Higher; Earnings Parallel 1927 1st Quarter

Freeport Texas Co. and subsidiaries report for quarter ended May 31, 1928, net income of \$866,271 after expenses and reserves for depreciation and taxes, equivalent to \$1.19 a share earned on 729,844 shares of no-par stock. This compares with \$405,160 or 55 cents in preceding quarter and \$880,737, or \$1.20 a share in quarter ended May 31, 1927.

Net income for six months ended May 31, 1928, totaled \$1,271,431 after above charges, equal to \$1.74 a share against \$1,599,589, or \$2.19 a share in corresponding period of preceding year.

Consolidated income account for quarter ended May 31, 1928, compares as follows:

	1928	1927	1926	1925
Gross sales.	\$3,481,174	\$3,202,430	\$2,294,676	\$1,931,416
Costs & exp.	2,471,124	2,242,430	1,754,338	1,467,641
Gross prof.	\$1,010,050	\$960,000	\$540,338	\$463,775
Other inc.	31,599	33,227	11,280	11,731
Total inc.	\$1,041,649	\$993,227	\$551,618	\$475,506
Depr res.	53,045	50,905	61,119	75,389
Tax res.	122,333	61,585	49,956	59,302
Net inc.	\$ 866,271	\$880,737	\$440,543	\$340,815
Dividends.	1,277,227	.....	.....	.....
Deficit.	\$410,956	.....	.....	.....

Sulfur production for the first six months of 1928 shows an increase of 16% over the same period in 1927.

In connection with its report for the second quarter of the fiscal year, Freeport Texas Co., points out that for the period from June 1927, to June 1928, it has paid dividends as follows:

Aug. 1, 1927.	\$1.25 a share \$ 912,305
Nov. 1, 1927.	1.50 a share 1,094,766
Feb. 1, 1928.	1.75 a share 1,277,227
May 1, 1928.	1.75 a share 1,277,227

Total.....\$4,561,525

In addition royalties have been paid to Texas Co. as follows:

Aug. 1, 1927.	\$ 765,590
Feb. 1, 1928.	1,178,147

Total.....\$1,943,737

Stockholders of Archer-Daniels-Midland Co. vote to increase authorized common stock to 350,000 shares of no par from 225,000. Samuel Mairs, vice-president, states that the additional stock is to provide for the company's growth and general expansion policy-as reflected in the purchase of the Goodrich linseed oil plant in Milwaukee and the more recent acquisition of half of the linseed properties of American Linseed Co.

The Khimugol (Chemical Coal Trust), Russia, has assigned \$8,800,000 for capital construction this season, or 30 per cent. more than last year, according to the American Russian Chamber of Commerce. The Don Basin electric station, the Konstantinov station and a glass plant will be the principal construction items

Mond Nickel Co. approves proposal for 2 for 1 split up of present £1 par ordinary shares into 10s par shares and increases capital to £5,500,000 from £4,900,000 by creation of 1,200,000 additional 10s common shares.

Kuttroff, Pickhardt & Co., Inc., is granted authority by the Secretary of State, Albany, N. Y. to increase capitalization from present 2,000 shares of \$25 par value to 6,000 shares of no par value.

Texas Gulf Profits of \$6,674,658 Show Gain Over 1927 First Half

Texas Gulf Sulphur Co., Inc., reports, for quarter ended June 30, 1928, net income of \$3,586,819, after depreciation and federal taxes but before depletion, equivalent to \$1.41 a share earned on 2,540,000 shares of no-par stock. This compares with \$3,087,839, or \$1.21 a share, in preceding quarter, and \$3,262,277, or \$1.28 a share, in second quarter of 1927.

Net income for the first six months of 1928 totaled \$6,674,658, after above charges, equal to \$2.62 a share, against \$6,116,908 or \$2.40 a share, in first half of preceding year.

During the last quarter the company increased its reserves for depreciation and accrued federal taxes, by \$738,829, making total of these reserves \$11,125,429 on June 30, 1928.

Statement for quarter ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Net income*....	\$3,586,819	\$3,262,277	\$1,859,918	\$1,282,284
Dividends.....	2,540,000	2,540,000	1,587,500	1,428,750
Surplus†.....	\$1,046,819	\$722,277	\$272,418	‡\$146,466
P & L surp.....	12,538,122	10,040,998	7,855,818	7,262,662
Six months ended June 30:				
Net income*....	\$6,674,658	\$6,116,908	\$3,790,542	\$2,695,377
Dividends.....	5,080,000	5,080,000	3,175,000	2,540,000
Surplus.....	\$1,594,658	\$1,036,908	\$615,542	\$155,377

*After depreciation and federal taxes.

†Includes reserve for depletion.

‡Deficit.

Davison Offers Silica Gel Stock

Davison Chemical Co. directors have voted to offer stockholders rights to subscribe to 80,000 shares of Silica Gel Corp. stock on basis of one share of Silica Gel at \$25 for every five shares of Davison stock owned. Rights expire August 23. Offering has been underwritten by banking interests at \$24 a share.

The same banking group has purchased for approximately \$2,500,000 a 49% interest in the European Silica Gel company, the remaining 51% to be held by Silica Gel Corp. Silica Gel Corp. stock purchased by the bankers will not be offered to the public.

New York Stock Exchange committee on securities ruled that Davison Chemical common stock shall be ex rights August 2.

Sherwin Williams Co. declares the usual extra dividend of 12½ cents on common and the regular quarterly dividends of 75 cents on common and \$1.50 on the preferred. Both common dividends are payable August 15 to stock of record July 31, and the preferred dividend September 1 to stock of record August 15.

National Lead Co. declares regular quarterly dividends of \$1.25 on common, payable September 29 to stock of record September 14; \$1.75 on Class A preferred, payable September 15 to stock of record August 31, and \$1.50 on Class B preferred, payable November 1 to stock of record October 19.

Aldyco Corp. is incorporated in Delaware with authorized capital of \$30,000,000 preferred stock and 200,000 shares of no par common. Allied Chemical & Dye Corp. reports that this new company has been organized for purposes of facilitating the conduct of certain phases of its business and that organization of the new company is entirely an internal affair.

Committee on Stock List, New York Stock Exchange, announces the E. I. du Pont de Nemours & Co., \$1,395,000 additional 6 per cent. debenture stock will be admitted to stock list on notice of issuance.

Corn Products Income at \$6,026,054

Corn Products Refining Co. reports for six months ended June 30, 1928, net income of \$6,026,054 after interest, depreciation, federal taxes, etc., equivalent after 7% preferred dividend requirements to \$2.03 a share (par \$25) earned on 2,530,000 shares of common stock. This compares with \$5,552,267, or \$1.85 a share, in first six months of 1927.

Net income for second quarter of 1928 was \$3,311,347 after above charges, equal to \$1.13 a share on common, comparing with \$2,714,797, or 90 cents a share, in preceding quarter and \$2,814,489 or 94 cents a share, in second quarter of previous year.

Income account for six months ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
*Net earn.....	\$6,158,688	\$6,179,182	\$5,998,629	\$4,102,669
Other inc.....	1,471,886	1,042,107	1,162,511	835,984
Total inc.....	\$7,630,574	\$7,221,289	\$7,161,140	\$4,938,653
Int & depr.....	1,604,520	1,669,022	1,719,959	1,492,589
Net inc.....	\$6,026,054	\$5,552,267	\$5,441,181	\$3,446,064
Pfd divs.....	875,000	875,000	875,000	875,000
Com divs.....	3,795,000	3,162,500	3,162,500	2,530,000
Surplus.....	\$1,356,054	\$1,514,767	\$1,403,681	\$41,064

*After expenses, estimated federal taxes, etc.

Freeport Cash Distribution Statement

Freeport Texas Co. issues the following statement:

"There seems to be some confusion in respect to cash distributions in excess of earnings made by Freeport Texas Co.

"The books of Freeport Texas Co. uniformly show reserve for depletion. Additions to reserve for depletion during the fiscal year ended November 30, 1927, were \$2,250,772. It has been the policy of the company to distribute to stockholders not only from earnings, as shown in the statements, but also from depletion reserve. Earnings shown in 1927 were \$3,825,990, equal to \$5.24 a share on 729,844 shares of capital stock. Adding to the depletion reserve last year makes total income available for dividends \$6,076,762, or approximately \$8.30 a share.

"The company shows an increase at present of over \$3,300,000 in cash, government bonds, accounts and notes receivable, and inventory of sulphur above ground, taken at contract prices, as compared with the same time last year, after having paid out during that period \$6,505,262 for dividends and contingent royalties. These current assets as of this date are in excess of \$14,000,000."

Clark Chemical Co., Boston and Los Angeles, Cal., for the year ended Dec. 31, 1927, reports as follows:

Assets—*Real estate, \$201,643; *machinery equipment, \$509,608; *fixtures and tools, \$7,419; *autos, trucks and teams, \$1,206; merchandise and supplies, \$25,923; construction in process, \$19,930; accounts receivable, claims and deposits, \$21,542; cash, \$15,343; †leasehold and rights, \$549,000; prepaid expense, \$22,903; cash value officer's life insurance, \$4,397; organization expense and deferred charges, \$53,211. Total assets, \$1,432,125.

Liabilities—Common stock, \$920,665; account payable—inter company, \$22,580; advances, \$31,307; accounts payable and accruals, \$81,449; notes payable, \$544,461; ‡deficit, \$168,337. Total liabilities, \$1,432,125.

*Less depreciation. †As valued by directors. ‡Deduct.

Imperial Chemical Industries, Ltd., offers to acquire shares in Welsbach Light Co. which has an authorized capital of £265,000. Offer is subject to acceptance by 76% of Welsbach shareholders by August 14.

Hercules Powder Earns \$9.45 Share

Hercules Powder Co. for six months ended June 30, 1928, reports net profit of \$1,789,649 after depreciation and federal taxes, equivalent after dividend requirements on 7% preferred stock, to \$9.45 a share earned on 147,000 shares of common stock. This compares with \$1,507,412 or \$7.54 a share in first half of 1927.

Net profit for quarter ended June 30, was \$992,611 after above charges, equal to \$5.39 a share on common against \$797,038 or \$4.06 a share on common in preceding quarter and \$806,601 or \$4.12 a share in second quarter of previous year.

Income account for six months ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Gross rec.	\$14,620,377	\$13,745,054	\$12,959,737	\$11,631,975
*Net profit...	1,789,649	1,507,412	1,471,843	1,461,666
Pfd divs.	399,844	398,024	372,166	364,970
Surplus.	\$1,389,805	\$1,109,388	\$1,099,677	\$1,096,696

*After depreciation, federal taxes, etc.

John-Manville Profits Up Sharply

John-Manville Corp. and subsidiaries report for quarter ended June 30, 1928, net profit of \$1,600,438 after expenses, federal taxes, etc., equivalent after 7% preferred dividend requirements, to \$1.96 a share earned on 750,000 no-par shares of common stock, comparing with \$772,706, or 85 cents a share on common in preceding quarter. Net profit for first six months of this year totaled \$2,373,144, or \$2.81 a share on common stock.

Consolidated income account, including subsidiaries for quarter ended June 30, the preceding quarter and six months ended June 30, 1928, follows:

	Quar. end. June 30, '28	Quar. end. Mar. 31, '28	6 mos. end. June 30, '28
Sales.	\$12,199,573	\$10,144,156	\$22,343,730
Costs and expenses.	10,431,110	9,264,533	19,695,644
Net.	\$1,768,463	\$879,623	\$2,648,086
Federal taxes.	168,025	106,917	274,942
Net profit.	\$1,600,438	\$772,706	\$2,373,144

Consolidated Laundries Corp. and subsidiaries report for six months ended June 30, 1928, profit of \$316,216 after expenses, interest and other charges but before federal taxes. Net sales totaled \$4,499,095.

Balance sheet as of June 30 shows total assets of \$8,369,744, current assets of \$1,653,259 current liabilities \$1,071,871 and surplus of \$236,750. There were outstanding on above date 7,928 no-par shares of \$7.50 cumulative preferred and 396,903 no-par shares of common stock.

American Zinc, Lead & Smelting Co. and subsidiaries reports for quarter ended June 30, 1928, profit of \$229,083 after charges but before depreciation and depletion comparing with \$180,239 in preceding quarter and \$12,703 in second quarter of 1927.

For first six months of 1928, profit totaled \$409,322 against \$109,195 in first half of previous year.

Greene Cananea Copper Co. declares a dividend of \$1, payable October 1 to stock of record September 14. This dividend was declared at this time because no quorum of directors could be obtained next month.

On July 2 company paid a dividend of \$1.

Glidden Co. declares regular quarterly dividend of \$1.75 on prior preferred, payable October 1 to stock of record September 14.

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Air Reduction Co. Profits at \$874,294 Before Federal Taxes

Air Reduction Co., Inc., reports for quarter ended June 30, 1928, profit of \$874,294 after depreciation, etc., but before federal taxes, comparing with profit of \$728,940 in preceding quarter and \$699,193 in second quarter of 1927. Company has outstanding 676,203 no-par shares of stock.

Profit of first six months of 1928 totaled \$1,603,235 before federal taxes, against \$1,382,554 in first half of preceding year.

Income account for quarter ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Gross inc.	\$3,721,316	\$3,362,736	\$3,148,472	\$2,563,971
Oper exp.	2,361,582	2,204,264	1,986,894	1,684,666
Oper inc.	\$1,359,734	\$1,158,472	\$1,161,578	\$879,305
Depr res.	485,440	459,279	470,194	301,924

*Profit. \$874,294 \$699,193 \$691,384 \$577,381

Six months ended June 30:

	1928	1927	1926	1925
Gross inc.	\$7,224,838	\$6,728,597	\$6,192,181	\$4,913,109
Oper exp.	4,647,216	4,431,177	3,952,990	3,232,762
Oper inc.	\$2,577,622	\$2,297,420	\$2,239,191	\$1,680,347
Depr res.	974,387	914,866	917,189	586,880

*Profit. \$1,603,235 \$1,382,554 \$1,322,002 \$1,093,467

*Before federal taxes.

International Salt Profits Down

International Salt Co., Scranton, Pa., and subsidiaries report for six months ended June 30, 1928, profit of \$3,108 after fixed charges and sinking fund, but before federal taxes, comparing with \$160,620 in first half of 1927. Stock outstanding amounts to 60,771 shares.

Consolidated income account for six months ended June 30, 1928, compares as follows:

	1928	1927	1926	1925
Net aft exp.	\$187,175	\$348,387	\$318,737	\$439,092
Fix chg & skg fund..	184,067	187,767	170,127	190,044

*Profit. \$3,108 \$160,620 \$148,610 \$249,048

*Before federal taxes.

United States Leather Co. reports for six months ended June 30, 1928, net profit of \$2,998,441 after depreciation, federal taxes, etc., equivalent after allowing for dividend requirements on \$16,215,700 7% prior preferred stock and for participating provisions of the Class A stock, to \$3.00 a share earned on 249,743 no-par shares of Class A stock and \$4.21 a share on 398,972 no-par shares of common stock. This compares with net profit of \$1,064,291 reported for six months ended June 23, 1927, which computed on the above share basis, is equal to \$1.99 a share on Class A stock, after dividend requirements on prior preferred stock.

Archer-Daniels-Midland Co. declares regular quarterly dividends of 75 cents on common and \$1.75 on the preferred, both payable August 1 to stock of record July 21.

Chemical & Dye Corp. declares regular quarterly dividend of \$1.75 a share on preferred stock, payable August 1 to stock of record July 20.

Pyrene Manufacturing Co. declares regular quarterly dividend of 2% on common, payable August 1 to stock of record July 19.

British Celanese Yearly Report Indicates Profits Have Tripled

For year ended February 29, 1928, British Celanese reports profit of £864,889, after deducting £778,323 for debenture and bond interest and expenditures for royalties and research, compares with a profit of £223,194 in the previous year. From profit, £378,261 was deducted for depreciation, £57,265 appropriated as part commutation of royalty, £127,500 for half year's preference dividend, less tax paid on April 30, leaving balance of £301,863 to be carried forward. By appropriating £84,806 from share premium reserve in addition to £378,261 from profits arising from depreciation, reserve totals £1,000,000.

British Celanese shareholders have passed resolutions increasing authorized capital to £10,450,000. This is accomplished by creation of 3,500,000 first preference shares of £1 par and 1,900,000 common shares of 10s par and conversion of existing 4,250,000 7½% participating preference shares into 7½% participating second cumulative preference shares, with participating rights limited to a further 2½%, and issue of 2,000,000 £1 par 7% cumulative preference shares at par and 356,000 of the new 10s common shares at £3, representing a premium of £2 10's.

Net income of Industrial Rayon Corp. for six months ended June 30, 1928, was \$683,268 after charge and federal taxes comparing with \$269,270 in first half of 1927.

Net income in June was \$154,179 after charges and federal taxes comparing with \$58,757 in June, 1927. June earnings were the largest reported for any month in company's history.

Swedish Match Co. is reported to have granted a £10,000,000 loan to Portugal in exchange for the match monopoly in Portugal and its colonies.

Atlas 1st Half Profits Higher

Report of Atlas Powder Co. and subsidiaries for six months ended June 30, 1928 shows net income of \$974,869 after charges, depreciation and taxes, equivalent after dividends on 6% preferred stock, to \$2.70 a share earned on 261,438 no-par shares of common stock. This compares with \$952,670 or \$2.61 a share in first half of 1927.

Consolidated income account for six months ended June 30, 1928, compares as follows:

	1928	1927	1926
Net sales.....	\$9,704,499	\$9,764,629	\$10,030,208
*Net income.....	974,869	952,670	1,113,906
Preferred dividends.....	270,000	270,000	270,000
Common dividends.....	522,870	522,867	522,854

Surplus..... \$181,999 \$159,803 \$321,042

*After charges, depreciation and federal taxes.

Penick & Ford, Ltd., and subsidiaries report for quarter ended June 30, 1928, profit of \$239,636 after depreciation and interest but before federal taxes, comparing with profit of \$311,201 in preceding quarter and \$212,541 in second quarter of 1927. Stock outstanding consists of 33,400 shares of 7% preferred and 433,773 no-par shares of common.

For first half of 1928, profit totaled \$550,837 before federal taxes, against \$634,753 in first six months of preceding year.

Anaconda Copper Co. declares dividend of \$1 per share on capital stock, par \$50, payable August 20 to holders of record July 14.

Vanadium Corp. of America declares regular quarterly dividend of 75 cents, payable August 15 to stock of record August 11

The Industry's Bonds

1928 July 31		1928		1927		Sales In July Since Jan. 1928		ISSUE	Date Due	Int. %	Int. Period	Orig. (1) Offering \$
High	Low	High	Low	High	Low	High	Low					
NEW YORK STOCK EXCHANGE												
105½	105½	106½	104	105	99	160	1,701	Am. Agri. Chem.	1941	7½	F. A.	30,000
101	101	102½	100	103½	100½	306	1,857	Am. Smelt & Refin "A" 5%.....	1947	5	A. O.	...
108½	108½	109½	106½	108½	107½	94	606	Am. Smelt & Refin "B" 6%.....	1947	6	A. O.	...
120	120½	106½	103	105½	103½	607	...	Anaconda Copper Mng.	1953	6	F. A.	100,000
...	...	137	110½	116½	106½	570	...	Anaconda Copper Mng 7%.....	1938	7	F. A.	50,000
103½	102½	105½	96½	97	87	250	3,281	Anglo Chilean.	1945	7	M. N.	16,500
101	101	103	100	103½	100½	112	561	Atlantic Refin.	1937	5	J. J.	15,000
...	...	103½	100	102½	100½	32	195	By product Coke.	1945	5½	M. N.	8,000
...	...	102½	100½	104½	101½	7	99	Corn Product Refin.	1934	5	M. N.	10,000
107½	107½	117	106	111½	106	60	1,270	General Asphalt.	1939	6	A. O.	5,000
...	...	100	90	91½	81½	3	97	Int. Agric. Corp.	1932	5	M. N.	30,000
...	...	86	79	...	...	9	231	Int. Agri. Corp. stamped, extended.	1942	5	M. N.	7,020
...	...	133	113	133½	104	192	2,651	Liq. Carbonio Corp.	1941	6	F. A.	5,000
...	...	120	100½	102	98½	270	3,665	Montecatini.	1937	7	...	...
...	...	100½	98½	95½	92½	127	756	Ex War.	1937	7	...	...
103½	103½	115½	113½	115	113½	6	62	People's Gas & Coke.	1943	6	A. O.	10,000
...	...	108½	104	105½	101½	85	897	Refunding.	1947	5	M. S.	40,000
102½	102½	104	102½	104½	101½	860	3,969	Standard Oil N. J.	1946	5	F. A.	120,000
...	...	115½	101½	101½	98½	29	390	Tenn. Cop. and Chem.	1941	6	A. O.	3,000
...	...	91½	90	95½	91	18	73	Va. Iron C. & C. ....	...	...	...	...
NEW YORK CURB												
...	...	...	...	99½	95½	...	196	Agri. Mtge. Bk. of Col 46.	1946	7	J. O.	...
...	...	...	...	99½	96	...	353	Agri. Mtge. Bk. of Col.	1947	7	J. J. 15	3,000
100½	100	103½	100	105½	105	420	3,167	Alum. Co. of Am 52.	1952	5	...	...
...	...	...	...	101½	99	...	609	American Cyan.	1942	5	A. O.	5,000
100½	100½	101½	100½	102½	101½	86	812	Anaconda Cop.	1929	6	J. J.	25,000
99½	99½	101½	98½	99½	95½	349	2,221	Koppers Gas and Coke.	1947	5	J. D.	25,000
99½	99½	103½	98	103	98	6	129	Natl. Dist. Prod.	1935	6½	J. D. 15	3,500
94½	94½	98½	93½	98	95½	362	3,322	Shawinigan W & P.	1967	4½	...	...
...	...	...	...	100½	100	...	30	Silica Gel.	1952	6½	...	...
...	...	...	...	99½	96	190	851	Solvay Am. Invest. Corp.	1942	5	M. S.	15,000
100	100	101½	99½	100½	99	257	1,855	Swift & Co.	1932	5	A. O.	50,000
...	...	...	...	99	90	...	202	U. S. Ind. Alc.	1941	6½	M. N.	...
...	...	...	...	103½	98½	39	305	Westvaco Chlorine Prod.	1937	5½	M. S.	2,500
BOSTON												
...	...	103	101½	102½	101	40	278	Swift and Co.	1944	5	J. J.	50,000
CHICAGO												
...	...	103	101½	103½	101½	36	106	Swift and Co.	1944	5	J. J.	50,000
...	...	...	...	101½	99	...	...	Westvaco Chlorine Prod.	1937	5½	M. S.	2,000

Jones & Laughlin Earnings Are Off

Jones & Laughlin Steel Corp. and subsidiaries report, for six months ended June 30, 1928, net income of \$7,144,548, after depreciation, depletion, interest and federal taxes, equivalent, after dividends on 7% preferred stock, to \$8.88 a share earned on 753,320 shares of common stock. This compares with \$7,234,803 or \$9.06 a share in first six months of 1927.

Net income for June quarter was \$4,241,091 after above charges equal to \$5.60 a share on common, comparing with \$2,903,457 or \$3.28 a share in preceding quarter and \$3,576,079 or \$4.45 a share in second quarter of previous year.

Wood Chemical Products Co. reports earnings, after all charges, for six months ended June 30, of \$72,000, equivalent to annual rate of \$7.20 a share on Class A stock or over three and one-half times Class A dividend requirements. Company has retired over 900 shares of Class A stock from sinking fund operations so far in 1928.

Davison Chemical Co. sells Curtis Bay Railroad to the Baltimore & Ohio Railroad, subject to approval of Interstate Commerce Commission.

Loyal Solvent Products Co., New York, changes name to Royal Solvents.

Archer-Daniels-Midland Nine

Months Profit Higher at \$1,390,528

Net profit of Archer-Daniels-Midland Co. for nine months ended May 31, 1928, was \$1,390,528 after depreciation, federal taxes, etc., equivalent after allowing for dividend requirements on 7% preferred stock, to \$5.45 a share earned on 213,712 no-par shares of common stock. This compares with \$1,087,066, or \$4.31 a share on 200,000 common shares in corresponding period of previous year.

For quarter ended May 31, net profit was \$563,210 after above charges, equal to \$2.28 a share on 213,712 shares of common, against \$437,845 or \$1.81 a share on 200,000 common shares in preceding quarter and \$418,105 or \$1.72 a share on 200,000 shares of common in quarter ended May 31, 1927.

Societe Progyll-Kuhlmann is formed in France with capital of 5,000,000 francs, to manufacture and sell miscellaneous chemical products. It will specialize, however, in carbon bisulfide, according to the Department of Commerce. Its administrative board includes Donat Agache, president, Etablissements Kuhlmann.

Gulf Fertilizer Co., Tampa, Fla., plans construction of new plant to be equipped for production of about 5,000 tons of commercial fertilizer a month, and to cost over \$160,000 with equipment.

The Industry's Stocks

1928 July 31		1928		1927		Sales In Since July Jan. 1, '28		ISSUES	Par \$	Shares Listed	An. Rate	Earnings \$-per share-\$	
Bid	Asked	High	Low	High	Low	In July	Since '28					1927	1926
NEW YORK STOCK EXCHANGE													
65½	66½	74½	59	199½	134½	31,000	279,000	Air Reduction.....	No	223,445	\$5.00	9 mo. 12.63	10.83
175½	176½	182½	146	169½	131	146,900	1,345,700	Allied Chem. & Dye.....	No	2,178,109	6.00	10.02	9.79
122	123	...	...	124	120	1,700	18,170	7% pfd.....	100	392,849	6.00	...	61.28
19½	19½	23½	15½	21½	8½	14,500	246,420	Am. Agricultural Chem.....	100	333,221	2.00	Nil	...
68½	69½	75	55½	72½	28½	21,900	265,720	pfd.....	100	284,552	1.50	...	3.59
94	94½	95½	70½	77½	43½	745,900	6,229,060	American Can.....	25	2,473,918	2.00	4.11	4.38
141	141½	147	136½	141½	126	2,300	31,760	pfd.....	100	412,333	7.00	31.66	33.31
109	110½	118½	56½	72½	20½	42,800	1,902,220	American Linseed.....	100	167,500	...	...	...
118	120	130½	86½	92½	46½	1,900	72,860	pfd.....	100	167,500	7.00	7 mo. 6.00	.62
48	48½	51	39	49½	36½	22,400	257,020	American Metal Ltd.....	No	594,278	4.00	9 mo. 3.64	3.88
110½	111	117½	111	113½	108	900	23,496	pfd.....	100	50,000	7.00	9 mo. 50.27	53.15
203½	203½	205½	169	188½	132½	207,900	1,877,280	Amer. Smelt and Refin.....	100	609,980	7.50	6 mo. 19.64	23.38
135	137	...	...	133	119½	2,400	33,500	pfd.....	100	500,000	7.00	6 mo. 17.0½	35.52
25½	26½	32½	6½	10½	5½	38,000	767,600	Amer. Zinc & Lead.....	25	193,120	...	9 mo. Nil	...
86½	88	98	40	51½	35	7,400	537,200	pfd.....	25	96,560	...	9 mo. 2.31	...
67	67½	74½	53½	60½	41½	136,700	4,627,620	Anaconda Copper Mining.....	50	3,000,000	3.00	...	4.74
79½	80	97	55½	63	38	13,000	258,880	Archer Dan. Mid.....	No	200,000	...	5.76	6.35
113½	114	115½	112½	112½	106	340	2,510	pfd.....	100	43,000	7.00	37.31	35.23
75	80	101	63	70	56½	1,000	34,700	Atlas Powder Co.....	No	260,393	4.00	5.75	7.04
103	104	110½	102	107	98	160	3,238	pfd.....	100	90,000	6.00	6 mo. 22.71	26.46
...	...	153	95½	131½	104	327,600	1,256,880	Atlantic Refining.....	100	500,000	...	9 mo. Nil	11.24
7½	7½	10	4	5½	3½	27,700	276,920	Butte Copper & Zinc.....	5	600,000	.50	9 mo. 0.09	.32
11½	11½	...	...	11½	7½	13,100	235,960	Butte Superior Mng.....	10	290,197	2.00	9 mo. 0.23	1.71
73	74	...	...	92½	66	2,200	47,020	By Prod. Coke.....	No	189,931	3.00	9 mo. 4.84	6.00
23	3	5½	1½	2	1½	9,800	425,360	Calla Lead & Zinc.....	10	723,355	...	9 mo. 0.08	...
23	23½	25½	20½	24½	14½	40,300	693,120	Calumet & Hecla.....	25	2,005,502	1.50	9 mo. 0.29	.75
44	45	63½	40	55½	42	31,300	763,920	Certaunted Prod.....	No	307,000	4.00	9 mo. 6.07	6.02
94½	97	...	...	118½	106	1,100	...	1st pfd.....	100	43,000	7.00	9 mo. 56.80	54.30
44½	44½	46½	37½	44½	33½	77,100	953,730	Chile Copper.....	25	4,435,595	2.50	6 mo. 0.62	2.65
81½	82	98½	79	101½	66½	3,300	94,840	Columb Carbon.....	No	204,131	4.00	9.41	6.51
149	152	189½	137½	203	145	14,000	306,500	Commercial Solvents.....	No	108,861	4.00	9 mo. 9.24	14.13
103½	103½	114½	80½	86½	58½	60,300	1,205,060	Cont. Can.....	No	620,000	6.00	7 mo. 7.54	6.36
124½	125½	128	123	126	120	110	2,220	pfd.....	100	52,930	7.00	7 mo. 86.82	70.55
75½	75½	82½	64½	68	46½	78,800	1,290,600	Corn Products.....	25	2,530,000	2.00	9 mo. 4.01	4.03
140	143	146½	138½	142½	128	400	11,200	pfd.....	100	250,000	7.00	9 mo. 47.62	47.73
51½	52	57½	34½	48½	26½	210,300	982,360	Davison Chem.....	No	310,000	...	...	...
50½	51	...	...	42½	36½	7,500	262,000	Devco & Rayn A.....	No	95,000	2.40	(t) 5.47	5.22
113½	115	...	...	114½	101	220	2,390	1st pfd.....	100	18,096	7.00	6 mo. 53.23	49.70
114½	114½	121½	114	118	105½	3,400	38,940	Dupont deb.....	100	795,212	6.00	9 mo. 57.04	52.51
372	375	405½	310	343½	168	27,500	408,560	Dupont de Nemours.....	No	2,661,658	9.50	15.45	13.98
183½	184½	194½	163	175½	126½	53,700	242,040	Eastman Kodak.....	No	2,055,340	5.00	...	9.50
130	132	132½	125	131½	119½	90	942	pfd.....	100	61,657	6.00	...	322.11
110	135	...	...	97	75½	200	4,000	Fed. Mining & Smelting.....	100	50,400	...	23.36	35.95
69½	74½	76½	65	71½	46½	99,500	1,572,220	Fleischmann.....	No	4,500,000	3.00	4.30	4.08
59½	60	109½	55	106½	34	167,300	2,436,320	Freeport Texas.....	No	729,733	4.00	9 mo. 5.24	2.48
72½	73½	94½	68	96½	65	42,400	1,498,100	General Asphalt.....	100	243,550	...	6 mo. 5.00	8.11
112	115	141½	110½	144½	107½	2,620	42,920	pfd.....	100	68,742	5.00	6 mo. 4.20	27.58
89	90	105½	71	78½	42	95,700	2,217,520	Gold Dust.....	No	318,586	...	6.20	3.01
70	71	73½	64½	70	43½	7,300	112,910	Household Prod.....	No	575,000	3.50	6 mo. 5.22	5.22
16½	16½	...	...	16½	6½	9,500	240,800	Intern. Agri.....	No	441,695	...	Nil	1.60
78½	79	80½	48½	65	33	4,100	72,800	pfd.....	100	100,000	...	Nil	14.06
96	96½	103	73½	89½	38½	933,600	8763,900	Intern. Nickel.....	25	1,673,374	2.00	9 mo. 2.26	3.00
115	118	116	110½	110	103½	100	...	pfd.....	100	89,126	6.00	9 mo. 46.94	62.35
53	54	69	49½	75	63	500	9,288	Intern. Salt.....	100	60,771	6.00	6 mo. 2.64	8.35
112	170	134	96½	78½	45	103,400	802,260	Johns-Manville.....	No	750,000	...	4.69	4.34
69½	70	77½	63½	78½	45	21,100	444,500	Liquid Carbonic Corp.....	No	125,000	3.60	5.90	11.34
48½	49½	57½	46	58½	43	1,600	34,440	Mac and Forbes.....	No	376,748	2.00	9 mo. 2.36	3.30
130½	131	137½	117½	132½	82	24,900	248,860	Matheson Alk.....	No	147,207	6.00	9 mo. 11.27	9.88
123½	125	126	114½	120	103	85	875	pfd.....	100	24,750	7.00	9 mo. 74.06	67.85
20½	20½	22	17½	20½	13	12,900	256,800	Miami Copper.....	5	747,114	1.50	...	1.52

1928 July 31		1928		1927		Sales Since Jan. 1, '28		ISSUES	Par \$	Shares Listed	An. Rate	Earnings \$-per share-\$	
Bid	Asked	High	Low	High	Low	In July	Jan. 1, '28					1927	1926
36	37	58	29	56	17	24,400	430,440	National Dist. Prod.	No	167,651	...	9 mo. 0.54	...
58	59	71	51	69	43	1,800	23,360	pf.	No	109,795	...	9 mo. 1.62	...
119	122	...	...	202	95	3,200	55,680	National Lead	100	206,554	8.00	10.25	35.33
144	145	...	...	139	131	700	9,320	pf. A	100	243,676	7.00	...	...
119	...	...	...	116	104	500	7,680	pf. B	100	103,277	6.00	...	...
29	30	37	22	27	19	17,800	399,000	Penick & Ford	No	433,773	...	9 mo. 2.04	1.37
178	179	...	...	168	126	4,100	191,380	Peoples Gas Chi.	100	60,000	8.00	11.15	11.04
40	41	49	37	43	36	10,600	244,300	St. Joseph Lead	10	1,951,517	2.50	1.85	4.21
44	45	49	37	41	35	177,500	3,061,420	Standard Oil Co. of N. J.	25	24,262,532	1.00	...	5.01
34	34	41	28	34	29	222,600	3,868,780	Standard Oil Co. of N. Y.	25	17,023,928	1.60	0.90	1.94
13	14	16	10	13	8	19,200	406,800	Tenn. Cop. & Chem.	No	794,624	1.00	...	1.31
69	69	80	62	81	49	246,900	3,492,240	Texas Gulf Sulfur	No	2,540,000	4.00	4.76	3.69
157	158	162	136	154	98	245,700	1,491,900	Union Carbide	No	2,827,470	6.00	9 mo. 6.64	9.07
11	12	12	4	10	3	140	...	United Dyewood	100	139,183	7.00	9 mo. Nil	...
69	74	...	...	49	36	980	2,380	pf.	100	39,500	...	6 mo. 2.72	3.88
109	110	122	102	111	69	32,300	746,880	U. S. Ind. Ale.	100	240,000	5.00	6.00	7.04
120	121	...	...	121	107	190	2,860	pf.	100	60,000	7.00	...	35.16
54	54	55	44	48	26	31,000	143,590	Va. Car. Chem Com. 6% pf.	100	213,350	...	...	6.73
95	97	...	...	91	73	3,400	27,690	7% pf.	100	142,910	7.00	...	17.54
NEW YORK CURB													
135	133	197	120	145	30	400	54,670	Acetol Prod.	No	60,000	...	...	...
...	...	...	...	43	25	2,200	104,170	Aluminum Co. of America	No	1,427,625	...	4.02	...
181	17	24	13	18	3	33,800	201,140	Amer. Rayon Prod.	No	263,772	1.20	3.09	3.49
33	33	41	25	29	11	9,800	142,040	Amer. Solvents & Chem. pf.	No	110,000	1.00	...	Nil
43	43	54	26	31	14	13,600	150,300	Anglo Chile Nitrate	No	160,000	...	Loss	Nil
...	...	...	...	43	22	200	...	Canad. Ind. Ale.	No	1,756,750	...	2.49	2.63
71	70	103	67	117	44	2,100	177,940	Celanese Corp of Am	No	800,000	1.28	...	...
80	80	122	72	129	60	400	19,300	Celluloid Co.	100	1,000,000	...	1.91	1.80
52	52	69	49	133	113	200	5,590	1st pf.	100	70,980	...	...	...
...	...	...	...	91	84	700	5,080	Celotex pf.	No	24,551	...	...	5.06
...	...	...	...	126	76	200	...	Chesbore Mfg Co.	25	164,730	3.00	...	8.06
...	...	...	...	38	24	1,200	45,020	Courtaulds	£1	120,000	4.00	...	18.18
...	...	...	...	202	180	...	998	Hercules Powder	100	£12,000,000	161%	9 mo. 16.37	18.18
11	11	13	7	121	114	70	910	pf.	100	147,000	16.37	28.04	30.82
85	82	97	78	10	7	800	11,980	Heyden Chem.	10	111,392	7.00	...	0.32
...	...	...	...	24	4	43,000	655,980	Indus. Rayon "A"	No	150,000	...	...	2.27
...	...	...	...	39	37	400	9,260	Monsanto Chem.	No	452,544	...	6.11	5.60
115	114	123	85	194	178	20	86,440	N. J. Zinc	100	110,000	2.50	14.34	14.34
...	...	...	...	105	84	12,900	20,480	Palmolive Peet.	No	490,816	8.00	5.04	2.86
...	...	...	...	14	8	700	12,780	Penn Salt	50	1,500,000	5.00	8.09	6.08
...	...	...	...	335	160	150	1,130	Pyrene Mfg.	10	150,000	2%	6.42	2.38
...	...	...	...	110	100	130	1,130	Royal Baking Powder	...	223,158	...	...	...
24	24	29	17	68	44	25	1,700	Sherwin Williams	25	594,445	3.00	6.42	5.59
76	75	83	70	20	13	9,500	85,920	Silica Gel	No	600,000	...	...	6.03
...	...	...	...	81	64	7,500	...	Standard Oil Co. of Indiana	25	9,136,618	...	...	6.86
...	...	...	...	12	5	300	9,600	Snia Viscosa	150 lire	6,666,666	...	...	...
132	132	137	125	130	115	2,650	41,730	Swan & Finch	25	34,458	...	8.13	10.43
485	475	630	450	499	145	3,570	78,268	Swift & Co.	100	1,500,000	8.00	...	...
60	58	100	57	110	82	3,015	30,725	Tubize "B"	No	78,868	...	10.10	11.35
76	76	85	67	77	50	5,200	105,400	U. S. Gypsum	20	687,875	8%	5.26	8.71
CLEVELAND													
151	151	107	104	115	74	446	...	Cleve-Cliff Iron	No	400,000	4.00	...	...
...	...	...	...	108	70	61	...	Dow Chem.	No	100,000	4.00	...	...
...	...	...	...	106	100	127	...	pf.	100	30,000	7.00	...	...
...	...	...	...	21	15	...	...	Glidden	No	400,000	2.00	6 mo. 3.03	3.41
49	49	50	47	100	84	1,728	...	pf.	100	71,922	7.00	23.91	25.98
109	109	111	105	109	102	4,623	...	Grasselli	100	215,704	...	11.27	10.24
...	...	...	...	41	...	...	...	pf.	100	123,742	6.00	...	23.68
78	78	80	65	70	44	100	...	Indus. Rayon "A"	No	452,544	...	...	2.27
...	...	...	...	109	104	361	...	Sherwin Williams	25	594,445	3.00	6.42	5.59
25	25	27	25	...	...	825	...	pf.	100	125,000	6.00	...	...
...	...	...	...	...	...	...	...	Wood Chemical Prod. "A"	No	20,000	2.00	...	...
PITTSBURGH													
...	...	25	19	33	18	75	1,786	Am. Vitriified Prod.	50	70,000	7.50	2.95	2.19
CHICAGO													
54	53	69	49	86	53	501	...	Celotex	No	170,456	3.00	3.31	...
...	...	...	...	92	82	189	...	pf.	100	52,534	7.00	...	...
133	133	136	124	130	115	3,838	...	Monsanto Chem.	No	110,000	2.50	6.11	10.43
...	...	...	...	39	37	...	...	Swift & Co.	100	1,500,000	8.00	8.13	9.07
58	57	100	57	152	99	11,362	...	Union Carbide	No	2,827,470	6.00	10.10	11.35
...	...	...	...	110	82	...	...	U. S. Gypsum	20	687,875	8%	...	...
CINCINNATI													
266	265	300	249	125	113	...	222	Fleishmann pf.	100	12,295	6.00	1,589.49	1,501.80
...	...	...	...	250	177	2,458	17,276	Proc. & Gam.	20	1,250,000	4.75	...	9.17
BOSTON													
23	21	25	20	17	14	3,364	71,839	Calumet & Hecla	25	2,005,502	1.50	9 mo. 0.29	.75
137	129	137	124	130	115	958	9,948	Swift & Co.	100	1,500,000	8.00	8.13	10.43
ST. LOUIS													
...	...	47	39	36	36	195	337	Certaineed Prod. pf.	100	...	...	56.80	...
...	...	...	...	...	...	...	1,411	South Acid and Sulfur Co.	No	52,000	3.00	...	...
PHILADELPHIA													
138	136	149	114	105	74	582	8,262	Penn. Salt	50	150,000	5.00	8.09	6.08
...	...	...	...	118	89	62,800	951,403	United Gas Imp.	50	2,130,088	...	...	4.69
MONTREAL													
29	29	...	...	39	20	...	...	Asbestos Corp.	No	200,000	1.50	...	1.02
90	89	...	...	98	82	...	...	pf.	100	74,561	7.00	...	...
40	39	...	...	43	21	...	...	Canada Ind. Ale.	No	(d) 800,000	1.28	2.49	2.63
90	88	...	...	277	67	...	...	Shawinigan W. & P.	No	1,100,000	2.00	2.63	...
...	...	...	...	207	142	...	...	Sherwin William of Can.	100	40,000	6.00	8.84	9.54
...	...	...	...	127	117	...	...	pf.	100	34,350	7.00	...	...
BALTIMORE													
...	...	...	...	39	37	...	...	Davison Chem.	No	310,000	...	...	...
...	...	28	17	20	15	1,490	27,188	Silica Gel	No	600,000	...	...	...
UNLISTED													
...	...	...	...	...	...	...	...	Casein Co.	100	21,196	7.00	...	7.10
...	...	...	...	...	...	...	...	Merek & Co pf.	100	33,950	4.00	...	7.60
...	...	...	...	...	...	...	...	Merrimac	50	70,560	...	...	...
...	...	...	...	...	...	...	...	Newport Chem.	1	912,198	4%	...	...

*Old stock. † Combined A & B. (b) June 18 to Dec. 30. (d) 1927 earnings on 969,480. (e) Bid & Asked. (f) Thru Jan. 28 (g) High low.

The Trend of Prices

Business, Though Somewhat Retarded, Continued Lively During Last Month

Advances in Methanol and Acetate of Lime—Declines in Chlorate of Potash and Ammonium Bicarbonate Feature Market—July Shows Better Volume Than Last Year—Barium Chloride Higher—Chlorate of Soda Moving to Capacity.

Speaking in a comparative sense, even the heat and humidity have not been able to put a damper on good business conditions, if the opinions of various branches of the trade in the Metropolitan district may be taken as an index of chemical business conditions throughout the country. While the month of July showed a falling off in consumer interest as compared with the banner months of April, May and June, comparison with the corresponding month of 1927, finds the month just past well ahead of July last year in the volume of sales consummated. In one or two instances it is stated that July was ahead of any previous months this year, though the majority of opinion admits to a falling off in business. It seems a good omen that sellers are not spending the entire summer blaming existing conditions on the weather or "Presidential Year."

Principal Price Changes

Standing out in the generally serene condition are four price changes—advances in methanol and acetate of lime and declines in chlorate of potash and ammonium bicarbonate. Of these four the decline in chlorate of potash was the most unexpected and drastic. The drop in price was precipitated by the entrance into this market of a new importing factor and is but another reminder that competition from imported chemicals is still a factor to be reckoned with heavily. A leading American manufacturer has cut the price sharply to 6½¢ per pound in carload lots, f. o. b. works. This move has not effected the less carlot quantities, but reductions in that quantity would not be surprising if competition from imported goods becomes acute. The reduction in ammonium bicarbonate, though not so drastic, is for the same reason. It has been the policy of the American manufacturer of this article to treat imported competition in this manner on other items with quite fair success and it is reasonable to assume that the fight for the somewhat limited market will continue until one or the other of the contending factions is ousted from the market.

The advances in methanol and acetate of lime were brought about from the more natural causes of a better demand and curtailed stocks, with the inevitable result of a price advance. Both of these items are extremely firm and in some demand at the newly established levels.

The Strength in Barium Chloride

Strength in the barium chloride market has also been the cause of some comment of recent weeks. American manufacturers have advanced their inside price about \$2.00 a ton on the firmer market, which has apparently been brought about by a reported temporary shortage of imported stocks on the New York market. Talk of a duty advance because of a cost of production hearing before the Tariff Commission has probably been an influencing factor in supporting the market. Consumers are apparently not alarmed by this show of strength and the inquiry has not kept pace with sellers enthusiasm.

The tight position on copper sulfate has abated a bit over the month. That is, the rush of new orders has subsided, but sellers are still very busy taking care of the contracts and forward commitments. No great rush of new business is looked for until the Fall when the export demand from South America should again liven up proceedings. Announcement of the formation of a society to control the sale of Spanish and Italian mercury caused a slight flurry about the middle of the month, but this was short lived. Consumers on this market are calloused to monopolies, societies and rumors of both from abroad and are not to be shaken from their position, particularly as the movement of the market has been easier since the announcement rather than firmer as might be expected. While nothing definite has been stated as to the effect this "controlling organization" will have on the mercury market, importers intimate that an announcement of importance will be forthcoming before the present month is very old.

Chlorate of Soda Moving Well

With the exploitation of the latest use for chlorate of soda, the sale of this material to the farm district as a weed killer has been very brisk. One large seller claims to be sold out and having no trouble in keeping the daily production rolling out of the plant. No advance to former levels has been made in the price and none is anticipated at the moment. It will be recalled that this price also was lowered to stave off imported competition and the drop in price was to recent to expect an advance to the former levels.

Alkalies are all in the same good position which has marked their progress since the first of the year. It is true that some of the consuming industries have closed or curtailed their plants for the Summer, which has caused a falling off in contract withdrawals, but this type of business is expected to pick up within a few weeks. Calcium chloride has been moving in accordance with the predictions of the sellers in the Spring market and a recapitulation at the end of the season should show 1928 well ahead of last year. Anhydrous ammonia continues strong and with the warmer weather has been moving quite briskly over the entire month.

A decided drop in importations of acetaldehyde into the United States was recorded in 1927, when 50 pounds valued at \$20 were entered for consumption as compared with 94,724 pounds valued at \$12,950 in 1926, according to the Department of Commerce. A reduction in imports of paracetaldehyde is also noted for 1927, when 21,258 pounds, value \$4,017 were entered for consumption against 60,645 pounds in 1926, having a value of \$10,859. The following tables show the amounts and values of acetaldehyde and of paracetaldehyde entered for consumption during the period 1922-27.

Imports for Consumption—Acetaldehyde

	Pounds	Value
1922	82,390	\$13,192
1923	163,913	26,338
1924	132,344	22,493
1925	267,023	41,790
1926	94,724	12,950
1927	50	20

Imports for Consumption— Paracetaldehyde or Paraldehyde

	Pounds	Value
1922	91,265	\$16,363
1923	363,752	63,593
1924	680,870	120,346
1925	808,049	124,363
1926	60,645	10,859
1927	21,258	4,017

Prices Current

Heavy Chemicals, Coal-tar Products, Dye-and-Tan-stuffs, Colors and Pigments, Fillers and Sizes, Fertilizer and Insecticide Materials, Naval Stores, Fatty Oils, etc.

Chemical prices quoted are of American manufacturers for spot New York, immediate shipment, unless otherwise specified. Products sold f. o. b. works are specified as such. Imported chemicals are so designated. Resale stocks when a market factor are quoted in addition to makers' prices and indicated "second hands."

Oils are quoted spot New York, ex-dock. Quotations

f. o. b. mills, or for spot goods at the Pacific Coast are so designated.

Raw materials are quoted New York, f. o. b., or ex-dock.

Materials sold f. o. b. works or delivered are so designated.

The current range is not "bid and asked," but are prices from different sellers, based on varying grades or quantities or both. Containers named are the original packages most commonly used.

Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

Acetone — Stocks are still in rather limited supply in sellers hands and they are having no trouble in maintaining the level of 15c lb. which was established in all quarters at the end of June. The advance in price has not caused any falling off in consumer interest.

Acid Cresylic — Sellers report a fairly good movement into consuming channels. From the point of view of volume of business consummated, July of this year was ahead of July 1927. There has not been any change in price with the market held at 73c @ 75c gal. for pale and 71c @ 73c gal. for dark in good sized quantities.

Acid Formic — Is very routine at this writing and has been in this state throughout the month. With the textile industry marking time in New England, practically no business is being done on this material either out of the New York or Boston markets.

Acid Oxalic — Leading sellers have encountered some limited opposition in the Metropolitan district for small quantity parcels with a tendency to quote somewhat under the open market. In general the market is quite firm with a capacity business being consummated at 11c lb. in most cases, though 10¾c lb. is possible in some instances for large quantities.

Albumen — Approximately one half, or 154,000 pounds of the 316,500 pounds of dried egg albumen exported from Tientsin, China, during the first three months of 1928, was declared for export to the United States, according to the Department of Commerce. Prices in the domestic market on egg, blood and vegetable albumen are all unchanged and steady.

Alcohol — Following the scheduled advance in price on July 1, denatured alcohol has lacked any features. A slight call for supplies on contract which will go into consumption in the Fall months is now being felt, but during July spot business was generally routine. One development of interest during the month was the announcement by Prohibitioner Commissioner Doran that the 1929 quota will be fixed at 185,000,000 proof gallons or

1914 July	High	1 9 2 7 Low	Aver.		Current Market		1928 High	Low
.....	.24	.24	.24	Acetaldehyde, drs 1c-1 wks. lb.	.18½	.21	.26	.18½
.....	.20	.20	.20	Acetanilid, tech, 150 lb bbl. lb.	.23	.24	.24	.23
.....	.29	.29	.29	Acetic Anhydride, 92-95%, 100 lb clys. lb.	.29	.35	.35	.29
.....	.38	.32	.37	Acetin, tech drums. lb.	.....	.15	.15	.13
.02½	.12	.12	.12	Acetone, CP, 700 lb drums c-1 wks. lb.	.....	.15	.15	.13
1918	1.65	1.65	1.65	Acetone Oil, drs NY. gal.	1.65	1.75	1.75	1.65
.....	.42	.42	.42	Acetyl Chloride, 100 lb cby. lb.	.42	.45	.45	.42
Acids								
1.50	3.38	3.38	3.38	Acid Acetic, 28% 400 lb bbls c-1 wks. 100 lb.	.....	3.38	3.38	3.38
.....	11.92	11.92	11.92	Glacial, bbl c-1 wk. 100 lb.	.....	11.92	11.92	11.92
.....	.98	.98	.98	Anthranilic, retd, bbls. lb.	.98	1.00	1.00	.98
.....	.80	.80	.80	Technical, bbls. lb.	.....	.80	.80	.80
1.00	1.60	1.25	1.38	Battery, clys. 100 lb.	1.60	2.25	2.25	1.60
.23	.57	.57	.57	Benzoic, tech, 100 lb bbls. lb.	.57	.60	.60	.57
.07½	.08½	.08½	.08½	Boric, crys. powd, 250 lb bbls. lb.	.08½	.11	.11	.08½
.....	1.25	1.25	1.25	Broenner's, bbls. lb.	.....	1.25	1.25	1.25
1917	.85	.80	.84	Butyric, 100% basis clys. lb.	.85	.90	.90	.85
1917	4.90	4.85	4.89	Camphoric. lb.	.....	4.85	4.85	4.85
.....	.25	.25	.25	Carbolic, 10%, 50 gal bbls. lb.	.13	.14	.28	.13
.....	.15	.15	.15	Chlorosulfonic, 1500 lb drums wks. lb.	.15	.16	.16	.15
1918	.37	.25	.29	Chromic, 99%, drs extra. lb.	.25	.30	.30	.25
.....	1.00	1.00	1.00	Chromotropic, 300 lb bbls. lb.	1.00	1.06	1.06	1.00
.53	.44½	.43	.43½	Citric, USP, crystals, 230 lb bbls. lb.	.46	.59	.44½	.59
.....	.95	.95	.95	Cleve's, 250 lb bbls. lb.	.95	.97	.97	.95
1918	.60	.57	.61	Cresylic, 95%, dark drs NY. lb.	.71	.73	.71	.68
1918	.70	.60	.63½	97-99%, pale drs NY. lb.	.73	.78	.74	.72
1918	.11	.10	.10½	Formic, tech 85%, 140 lb cby. lb.	.11	.12	.12	.11
1918	.50	.50	.50	Gallic, tech, bbls. lb.	.50	.55	.55	.50
1918	.74	.69	.72	USP, bbls. lb.	.....	.74	.74	.74
.....	1.00	1.00	1.00	Gamma, 225 lb bbls wks. lb.	1.00	1.06	1.06	1.00
1918	.57	.57	.57	H, 225 lb bbls wks. lb.	.57	.63	.63	.57
.....	.67	.65	.65½	Hydriodic, USP, 10% soln cbylb. lb.	...	.67	.67	.67
.....	.45	.45	.45	Hydrobromic, 48%, coml, 155 lb clys wks. lb.	.45	.48	.48	.45
.....	.80	.80	.80	Hydrochloric, CP, see Acid Muriatic. lb.	.....	.80	.80	.80
.03	.06	.06	.06	Hydrocyanic, cylinders wks lb. lb.	.80	.90	.90	.80
.....	.11	.11	.11	Hydrofluoric, 30%, 400 lb bbls wks. lb.	.....	.06	.06	.06
.....	.85	.85	.85	Hydrofluosilicic, 35%, 400 lb bbls wks. lb.	.....	.11	.11	.11
.019	.05½	.05½	.05½	Hypophosphorous, 30%, USP, demijohns. lb.	.....	.85	.85	.85
.04	.13	.13	.13	Lactic, 22%, dark, 500 lb bbls lb. lb.	.04½	.05½	.06	.04½
.....	.52	.52	.52	44%, light, 500 lb bbls. lb.	.12	.12½	.13½	.12
.....	.60	.60	.60	Laurent's, 250 lb bbls. lb.	.52	.54	.54	.52
1918	.07½	.07½	.07½	Metanilic, 250 lb bbls. lb.	.60	.65	.65	.60
1918	.01	.01	.01	Mixed Sulfuric-Nitric. lb.	.....	.07½	.08	.07½
.....	.21	.18	.19½	drs wks. N unit	.01	.01½	.01½	.01
.....	1.65	1.65	1.65	drs wks. S unit	.18	.21	.21	.18
1.15	1.35	1.35	1.35	Monochloroacetic, tech bbl lb. lb.	.....	.65	.65	.65
1.30	1.70	1.70	1.70	Monosulfonic, F Delta bbls lb. lb.	.....	1.35	1.35	1.35
.....	.95	.95	.95	Muriatic, 18 deg, 120 lb clys c-1 wks. 100 lb.	.....	1.80	1.80	1.70
1918	.55	.55	.55	20 degrees, clys wks. 100 lb.	.85	.95	.95	.85
3.37½	5.00	5.00	5.00	N & W, 250 lb bbls. lb.	.55	.59	.59	.55
4.50	6.00	6.00	6.00	Naphthionic, tech, 250 lb wks. 100 lb.	.....	5.00	5.00	5.00
.07½	.11½	.11	.11	Nitric, 36 deg, 135 lb clys c-1 wks. 100 lb.	.....	6.00	6.00	6.00
.036	.08	.07	.07½	40 deg, 135 lb clys, c-1 wks. 100 lb.	.....	.11	.11½	.10½
.23	.19	.16	.16½	Oxalic, 300 lb bbls wks NY. lb.	.10½	.08½	.08½	.08
1918	.50	.50	.50	Phosphoric 50%, 150 lb cby. lb.	.....	.16	.16	.16
.50	.45	.30	.41½	Syrup, USP, 70 lb drs. lb.	.....	.50	.50	.50
.....	.86	.86	.86	Picramic, 300 lb bbls. lb.	.....	.50	.50	.40
.22½	.27	.27	.27	Picric, kegs. lb.	.40	.50	.50	.40
1918	.15	.15	.15	Pyrogallie, technical, 200 lb bbls. lb.	.....	.86	.86	.86
1.00	1.60	1.60	1.60	Salicylic, tech, 125 lb bbl. lb.	.....	.32	.32	.27
1.00	1.20	1.20	1.20	Sulfanilic, 250 lb bbls. lb.	.15	.16	.16	.15
.87½	1.10	1.10	1.10	Sulfuric, 66 deg, 180 lb clys c-1 wks. 100 lb.	1.60	1.95	1.95	1.60
1.25	1.50	1.50	1.50	1500 lb dr wks. 100 lb.	.....	1.20	1.20	1.20
.....	42.00	42.00	42.00	60°, 1500 lb dr wks. 100 lb.	.....	1.12½	1.12½	1.12½
.55	.30	.30	.30	Oleum, 20%, 1500 lb drs 1c-1 wks. 100 lb.	.....	1.52½	1.52½	1.52½
.30½	.37	.29½	.32½	40%, 1c-1 wks net. ton	.....	42.00	42.00	42.00
.....	.85	.85	.85	Tannic, tech, 300 lb bbls. lb.	.30	.40	.40	.30
.....	.37	.38	.38	Tartaric, USP, crys, powd, 300 lb bbls. lb.	.37	.38	.38	.34½
.....	.85	.85	.85	Tobias, 250 lb bbls. lb.	.....	.85	.85	.85

What Should a Lacquer Lack?

A GOOD lacquer must possess a number of definite characteristics, but one thing of which it should be completely devoid is strong or disagreeable odor.

Cellosolve* and its derivatives are the only nitrocellulose solvents commercially available from which odorless lacquers can be manufactured.

CARBIDE AND CARBON CHEMICALS CORPORATION

Carbide and Carbon Building

30 East Forty-second Street, New York City



Unit of Union Carbide and Carbon Corporation

*Trade-mark Registered

Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

97,363,000 wine gallons as compared with 85,000,000 for the current year. This slight increase is not looked upon as having any significance as the present allotment was the first and readjustments in the quota were expected to be necessary.

Ammonia — Was again outstanding during the month because of the continued strong position of the anhydrous grade. In the sellers estimation this has not been a warm season and any continued period of heat will add further strength to the market. In one direction it is stated that stocks are very limited with the capacity output of the plant moving into consumption daily. Aqua is in much the same condition as at this period last month. Talk of a heavy call for ammonia for use in fertilizer at the new Hopewell plant is also having its strengthening effect on the general market.

Ammonium Bicarbonate — In an effort to fight off imported competition, domestic manufacturers reduced the price $\frac{1}{4}$ c lb. during the month and the market is now named at \$6.00 @ \$6.50 100 lbs., f. o. b. Also these manufacturers have changed the system of quoting and prices are now named f. o. b. the importing centers of Boston, New York, Philadelphia and New Orleans, instead of f. o. b. the works. This is the first indication of domestic efforts to recapture the market and if the present price does now prove low enough, further reductions will doubtless follow.

Ammonium Chloride — Sales during July continued to surpass the estimate of American manufacturers. This is probably due to the fact that with the price at the current level it is impossible for importers to bring in stocks with any profit with the result that imports have dwindled down to practically nothing. In addition, the supposed extinction of the battery business has not materialized to the extent anticipated and demand from that direction is holding up fairly well. Market is quoted at \$4.65 100 lbs. points of possible import and \$4.70 100 lbs. in other quarters both carload business.

Ammonium Persulfate — After two months of practically no business because of seasonal lay off in the consuming trades, a better inquiry is noted at the time of going to press and makers are selling the daily output. There is an accumulation on hand, however, which should take care of any spurt in demand. Prices are named at 26c @ 30c lb. as to quantity.

Ammonium Sulfate — During the past month, contracts for futures have been cleaned up and the price has been advanced to a flat figure of \$2.35 per 100

1914 July	High	1 9 2 7 Low	Aver.		Current Market	1928 High	Low
.....	2.75	2.00	2.60	Trichloroacetic, bottles.....lb.	.....	2.75	2.75
.....	2.00	2.00	2.00	Kegs.....lb.	.....	2.00	2.00
.....	1.00	1.00	1.00	Tungstic, bbls.....lb.	1.00	1.25	1.25
.....	.19	.45	.45	Albumen, blood, 225 lb bbls.....lb.	.43	.47	.55
.....	.40	.95	.80	Egg, edible.....lb.	.79	.84	.84
.....	.92	.77	.82	Technical, 200 lb. cases.....lb.	.70	.75	.80
1918	.60	.60	.60	Vegetable, edible.....lb.	.60	.65	.65
.....	.50	.50	.50	Technical.....lb.	.50	.55	.55
.....	20	.19	.19	Alcohol Butyl, Normal, 50 gal	.....	18.25	.20
.....	.20	.19	.19	dra c-1 wks.....lb.	.....	18.75	.19
.....	.19	.18	.19	Drums, 1c-1 wks.....lb.	.....	17.75	.19
.....	.....	.....	.....	Tank cars wks.....lb.	.....	.....	.17
1.70	1.70	1.70	1.80	Amyl (from pentane)	.....	.....	.....
2.50	3.70	3.70	3.70	dra c-1 wks.....gal.	1.75	2.25	2.25
.....	.50	.50	.50	Diacetone, 50 gal dra del.....gal.	1.70	1.80	1.80
1919	.52	.37	.46	Ethyl, USP, 190 pf, 50 gal	.....	2.65	3.70
1918	.50	.29	.42	bbls.....gal.	.....	.66	.55
.....	.46	.25	.40	Anhydrous, drums.....gal.	.....	.49	.52
.....	1.00	1.00	1.00	Completely denatured, No. 1,	.....	.48	.50
.....	1.00	1.00	1.00	190 pf, 50 gal dra drums	.....	.43	.46
.....	.80	.80	.80	extra.....gal.	1.00	1.25	1.25
1918	.65	.65	.65	No. 5, 188 pf, 50 gal dra	.....	1.00	1.00
1917	.35	.35	.35	drums extra.....gal.	.80	.82	.82
1.75	3.25	3.15	3.08	Tank, cars.....gal.	.....	.65	.65
5.00	5.25	5.25	5.25	Isopropyl, ref, gal dra.....gal.	3.25	3.30	3.30
4.00	3.50	3.10	3.43	Propyl Normal, 50 gal dr.....gal.	5.25	5.50	5.50
5.00	5.25	5.25	5.25	Aldehyde Ammonia, 100 gal dr lb	3.10	3.20	3.20
.....	3.75	3.75	3.75	Alpha-Naphthol, crude, 300 lb	5.25	5.50	5.50
17.00	27.00	26.00	26.08	bbls.....lb.	.....	3.75	3.75
.....	.35	.35	.35	bbls.....lb.	24.30	26.00	24.30
.....	.12	.17	.17	Aluminum Metal, c-1 NY, 100 lb	.....	.35	.40
.....	.23	.23	.23	Chloride Anhydrous, 275 lb	.....	.17	.18
1.25	1.75	1.75	1.75	drums.....lb.	.....	.22	.24
.87	1.40	1.35	1.35	Hydrate, 96%, light, 90 lb	.....	1.75	1.75
.....	1.15	1.15	1.15	bbls.....lb.	.....	1.40	1.40
.25	.13	.10	.10	Stearate, 100 lb bbls.....lb.	.....	1.15	1.15
.04	.03	.02	.03	Sulfate, Iron, free, bags c-1	.....	.13	.14
.....	.21	.21	.21	wks.....100 lb.	.....	.03	.03
.....	.08	.08	.08	Coml, bags c-1 wks.....100 lb.	6.00	6.50	.....
6.25	5.05	4.85	5.00	Aminoazobenzene, 110 lb kegs. lb.	.21	.22	.21
.05	.07	.05	.06	Ammonium	.08	.09	.08
.10	.11	.11	.11	Ammonia, anhyd, 100 lb cyl.....lb.	4.65	5.15	5.15
.15	.15	.15	.15	Water, 26", 800 lb dr del.....lb.	5.25	5.75	5.25
.....	.27	.27	.27	Bicarbonate, bbls., spot 100 lbs.,	.11	.11	.11
2.60	2.30	2.55	2.41	Bifluoride, 300 lb bbls.....lb.	.15	.16	.15
2.60	2.55	2.35	2.42	Carbonate, tech, 500 lb cs.....lb.	.06	.10	.06
.....	.18	.18	.18	Chloride, White, 100 lb bbls.	.26	.30	.27
.....	.23	.25	.24	wks.....100 lb.	.....	.18	.18
.....	59.70	56.85	57.56	Gray, 250 lb bbls wks.....lb.	.....	2.35	2.90
.....	.55	.55	.55	Lump, 500 lb cks spot.....lb.	.....	2.50	3.00
1.55	2.25	1.90	2.10	Lactate, 500 lb bbls.....lb.	.....	60.85	60.85
.10	.15	.15	.15	Nitrate, tech, casks.....lb.	.55	.60	.55
.32	.41	.41	.41	Persulfate, 112 lb kegs.....lb.	1.90	2.25	1.90
.....	.90	.90	.90	Phosphate, tech, powd, 325 lb	.....	.16	.16
.....	.11	.14	.12	bbls.....lb.	.....	.48	.48
.03	.15	.14	.15	Sulfate, bulk c-1.....100 lb.	.....	.90	1.00
1918	.17	.17	.17	Southern points.....100 lb.	.....	.10	.11
.06	.16	.16	.16	Nitrate, 26% nitrogen	.....	.10	.12
.11	.28	.25	.26	31.6% ammonia imported	.....	.18	.17
.18	.20	.16	.17	bags.....ton	.....	.10	.10
.15	.42	.37	.38	Sulfoyanide, kegs.....lb.	.....	.12	.12
.14	.18	.18	.18	Amyl Acetate, (from pentane)	.....	.16	.16
.08	.12	.12	.12	dra.....gal.	.....	.48	.48
.....	.16	.14	.15	Alcohol, see Fusel Oil.....lb.	.....	.16	.15
.....	.15	.12	.13	Aniline Oil, 960 lb dra.....lb.	.....	.48	.41
.....	.08	.03	.06	Annatto, fine.....lb.	.....	.90	1.00
.05	.10	.10	.10	Anthraquinone, sublimed, 125 lb	.....	.10	.09
.03	.04	.03	.04	bbls.....lb.	.....	.10	.12
.....	14.75	14.75	14.75	Antimony, metal slabs, ton lots	.....	.18	.17
.....	47.50	47.50	47.50	Needle, powd, 100 lb cs.....lb.	.....	.10	.10
.13	.12	.12	.12	Chloride, soln (butter of)	.....	.17	.18
30.00	65.00	57.50	60.70	cbys.....lb.	.....	.10	.10
1916	.13	.13	.13	Oxide, 500 lb bbls.....lb.	.....	.20	.16
.....	.04	.04	.04	Salt, 66%, tins.....lb.	.....	.42	.38
.05	.07	.07	.07	Sulfuret, golden, bbls.....lb.	.....	.19	.17
17.00	23.00	23.00	23.00	Vermilion, bbls.....lb.	.....	.14	.12
.....	.39	.40	.39	Archil, conc, 600 lb bbls.....lb.	.....	.16	.15
.40	.46	.38	.43	Double, 600 lb bbls.....lb.	.....	.08	.08
.....	.....	.....	.....	Triple, 600 lb bbls.....lb.	.....	.16	.15
.....	.....	.....	.....	Argols, 80%, casks.....lb.	.....	.16	.15
.....	.....	.....	.....	Coude, 30%, casks.....lb.	.....	.11	.10
.....	.....	.....	.....	Arsenic, Red, 224 lb kegs, cs.....lb.	.....	.04	.03
.....	.....	.....	.....	White, 112 lb kegs.....lb.	.....	14.75	14.75
.....	.....	.....	.....	Asbestos, c-1 wks.....ton	.....	57.00	57.00
.....	.....	.....	.....	Barium, Carbonate, 200 lb bags	.....	.12	.12
.....	.....	.....	.....	wks.....ton	.....	60.00	54.00
.....	.....	.....	.....	Chlorate, 112 lb kegs NY.....lb.	.....	.13	.13
.....	.....	.....	.....	Chloride, 800 lb bbl wks.....ton	.....	.04	.04
.....	.....	.....	.....	Dioxide, 88%, 690 lb dra.....lb.	.....	.08	.07
.....	.....	.....	.....	Hydrate, 500 lb bbls.....lb.	.....	23.00	23.00
.....	.....	.....	.....	Nitrate, 700 lb casks.....lb.	.....	8.00	8.00
.....	.....	.....	.....	Barytes, Floated, 350 lb bbls	.....	.37	.36
.....	wks.....ton42	.41
.....	Bauxite, bulk, mines.....ton
.....	Beeswax, Yellow, crude bags.....lb.
.....	Refined, cases.....lb.



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BARIUM CHLORIDE
BARIUM SULPHIDE
(Black Ash)

SODIUM SULPHIDE
30°-32° Crystals

IRON OXIDE
(Venetian Red)

Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

pounds. The market is fairly strong for this season of the year with fair activity noted.

Antimony — After remaining in a rather weak position during the major part of the past month with lower prices prevailing, the metal market has recently taken a turn upwards and is now in stronger position. Metal is now quoted at 10c lb., the Chinese market is firmer and increased buying interest has been noted here. Both needle and oxide remain at the same figures as last quoted but like the metal are in a stronger position.

Barium Carbonate — Has not attracted any attention during the past two or three months and is generally regarded as routine at this time. The advance has not served to kill off any imported business as yet and the latter grade is quoted at \$57.00 ton on this market.

Barium Chloride — News of a Tariff Commission investigation of production costs has apparently had a firming effect on the market for the price of domestic goods has advanced since last reported and sales are now being made at \$56.00 ton which is some \$2.00 higher than the market which prevailed six weeks ago. It is reported in one quarter that importers were forced to buy from American manufacturers at a level which would preclude them from selling at the \$56.00 basis with any profit.

Beeswax — Quietness has prevailed in this market during the past month and prices have declined somewhat, crude yellow now being quoted at 36c @ 37c lb. and refined at 41c @ 42c lb. Although quiet, the market has been firmer lately and steady at the lower quotations.

Benzene — Sellers report that their entire quota for August has been spoken for at this early date. The market seems quite firm and the higher prices of gasoline have added strength to benzol. At the level of 22c gal. dealers are having no trouble in placing all that the mills now offer.

Bleaching Powder — Has slowed down considerably of recent weeks as might be expected at this season of the year. Little business is passing at the moment and the market is quiet at quoted levels.

Blood — Has been quiet and in general rather weak during the past month. As a result, prices are lower at all points. New York is quoted at \$4.95 per unit, Chicago at \$4.90 per unit and South American at \$5.00 per unit.

Borax — Since the drastic cut in price in one quarter some two months ago there

1914 July	High	1927 Low	Aver.		Current Market	High	1928 Low
.47½	.58	.56	.57½	White, cases.....lb.	.56	.58	.58
.....	.65	.65	.65	Benzaldehyde, technical, 945 lb drums wks.....lb.	.65	.70	.65
.....	.23	.21	.22	Benzene, 90%, Commercial, 8000 gal tanks wks.....gal.	.....	.22	.23
.....	.23	.21	.22½	CP, tanks works.....gal.	.....	.22	.23
.....	.70	.70	.70	Benzidine Base, dry, 250 lb bbls.....lb.	.70	.74	.74
.....	1.00	1.00	1.00	Benzoyl Chloride, 500 lb drs. lb.	.....	1.00	1.00
.....	.....	.....	.....	Benzyl Chloride, tech drs. lb.	.....	.25	.25
.....	.24	.24	.24	Beta-Naphthol, 250 lb bbl wk lb	.24	.26	.24
.....	1.35	1.35	1.35	Naphthylamine, sublimed, 200 lb bbls.....lb.	.....	1.35	1.35
.....	.63	.63	.63	Tech, 200 lb bbls.....lb.	.63	.65	.63
75.00	80.00	80.00	80.00	Blanc Fixe, 400 lb bbls wks. ton	80.00	90.00	80.00
1.20	2.25	2.00	2.23	Bleaching Powder, 300 lb drs c-1 wks contract.....100 lb.	.....	2.25	2.25
.....	2.25	2.00	2.02	700 lb drs c-1 wks contract.....100 lb.	.....	2.00	2.00
3.00	3.75	4.75	4.47½	Blood, Dried, fob, NY.....Unit	.....	4.95	5.25
.....	.....	.....	.....	Chicago.....Unit	.....	4.90	5.35
.....	.....	.....	.....	S. American shpt.....Unit	.....	5.00	5.05
.....	.....	.....	.....	Blue.....Chinese Milori	.....	.....	.....
.27	.30	.28	.29	Prussian Soluble.....lb.	.31	.35	.31
28.50	38.00	29.00	29.04	Bone, raw, Chicago.....ton	29.00	30.00	29.00
.....	.06	.06	.06	Bone, Ash, 100 lb kegs.....lb.	.06	.07	.06
.02½	.08½	.08½	.06	Black, 200 lb bbls.....lb.	.....	.08½	.08½
20.00	30.00	28.00	29.46	Meal, 3% & 50%, Imp.....ton	32.00	37.00	32.00
.04	.04½	.04½	.04½	Borax, crys, 500 lb bbls.....lb.	.02½	.03½	.05
.07	.11	.11	.11	Bordeaux, Mixture, 16% pwd lb.	.11	.12	.11
.03½	.08	.08	.08	Paste, bbls.....lb.	.08	.10	.08
55.00	28.00	26.00	27.30	Brazilwood, sticks, shpmt.....lb.	26.00	28.00	26.00
1918	.60	.60	.60	Bronze, Aluminum, powd blk lb.	.60	1.20	.60
.....	.55	.55	.55	Gold, bulk.....lb.	.55	1.25	.55
.....	1.60	1.42	1.52	Butyl, Acetate, normal drs 1c-1 wks.....gal.	.....	1.45	1.60
.....	1.55	1.42	1.47½	Tank, drs wks.....gal.	.....	1.40	1.55
.....	1.00	1.00	1.00	Secondary, 50 gal drs.....gal.	1.00	1.05	1.00
.....	.70	.70	.70	Aldehyde, 50 gal drs wks.....lb.	.....	.70	.70
.....	.34	.34	.34	Propionate, drs.....lb.	.34	.36	.34
.....	.60	.60	.60	Stearate, 50 gal drs.....lb.	.....	.60	.60
.....	.57	.57	.57	Tartrate, drs.....lb.	.57	.60	.57
1918	1.50	1.35	1.42	Cadmium, Sulfide, boxes.....lb.	1.35	2.00	1.35
Calcium							
.....	3.50	3.50	3.50	Calcium, Acetate, 150 lb bags c-1.....100 lb.	.....	4.00	4.00
.....	.07½	.07½	.07½	Arsenate, 100 lb bbls c-1 wks.....lb.	.06	.07	.06
.....	.05	.05	.05	Carbide, drs.....lb.	.05	.06	.05
.....	1.00	1.00	1.00	Carbonate, tech, 100 lb bags c-1.....lb.	1.00	1.00	1.00
1918	27.00	27.00	27.00	Chloride, Flake, 375 lb drs c-1 wks.....ton	.....	25.00	27.00
12.00	21.00	21.00	21.00	Solid, 650 lb drs c-1 fob wks	.....	22.00	23.00
.....	52.00	52.00	52.00	Nitrate, 220 lb bbls c-1 NY ton	.....	52.00	52.00
.....	.09	.09	.09	Phosphate, tech, 450 lb bbls lb.	.07	.08	.07
.....	.....	.....	.....	Camwood, Bark, ground bbls lb.	.....	.18	.18
.22	.33	.33	.30½	Candelilla Wax, bags.....lb.	.23	.24	.23
.....	.08	.08	.08	Carbon, Decolorizing, 40 lb bags c-1.....lb.	.08	.15	.08
.....	.12	.12	.12	Black, 100-300 lb cases 1c-1 NY.....lb.	.....	.12	.12
.06½	.05½	.05½	.05½	Bisulfide, 500 lb drs 1c-1 NY.....lb.	.....	.06	.06
.....	.06	.06	.06	Dioxide, Liq, 20-25 lb cyl.....lb.	.....	.06	.06
.07½	.07	.07	.07	Tetrachloride, 1400 lb drs delivered.....lb.	.07	.07½	.07
.50	.50	.50	.50	Carnauba Wax, Flor, bags.....lb.	.55	.56	.54
.....	.90	.54	.60½	No. 1 Yellow, bags.....lb.	.50	.51	.50
.32	.37	.24	.31	No. 2 N Country, bags.....lb.	.36	.37	.35
.42½	.68	.48	.56	No. 2 Regular, bags.....lb.	.47	.48	.47
.....	.....	.....	.....	No. 3 N. C.....lb.	.28	.29	.28
.....	.....	.....	.....	No. 3 Chalky.....lbi	.29	.30	.29
.....	.18½	.15½	.17	Casein, Standard, ground.....lb.	.16	.16½	.15
.....	.34	.26	.32½	Celluloid, Scraps, Ivory cs.....lb.	.26	.30	.26
.....	.18	.18	.18	Shell, cases.....lb.	.18	.20	.18
.....	.34	.26	.32½	Transparent, cases.....lb.	.30	.32	.30
.....	1.40	1.40	1.40	Cellulose, Acetate, 50 lb kegs.....lb.	.....	1.40	1.40
.....	.03	.03	.03	Chalk, dropped, 175 lb bbls.....lb.	.03	.03½	.03
.03	.02½	.02½	.02½	Precip, heavy, 560 lb cks.....lb.	.....	.04½	.04½
.04	.04½	.04½	.04½	Light, 250 lb casks.....lb.	.02½	.03½	.02½
.....	.18	.18	.18	Charcoal, Hardwood, lump, bulk wks.....bu.	.18	.19	.18
1918	.06	.06	.06	Willow, powd, 100 lb bbl wks.....lb.	.06	.06½	.06
.....	.04	.04	.04	Wood, powd, 100 lb bbls.....lb.	.04	.05	.04
.....	.03	.02½	.03	Chestnut, clarified bbls wks.....lb.	.02½	.03	.02½
.04	.02	.01½	.02	25% tks wks.....lb.	.01½	.02	.01½
.....	.05½	.05½	.05½	Powd, 60% 100 lb bgs wks.....lb.	.....	.04½	.04½
8.00	8.00	8.00	8.00	Powd, decolorized bgs wks.....lb.	.05½	.06	.05½
.....	.01½	.01½	.01½	China Clay, lump, blk mines ton	8.00	9.00	8.00
.....	10.00	10.00	10.00	Powdered, bbls.....lb.	.01½	.02	.01½
14.00	15.00	15.00	15.00	Pulverized, bbls wks.....ton	10.00	12.00	10.00
.....	.03	.03	.03	Imported, lump, bulk.....ton	15.00	25.00	15.00
1918	.08	.08	.08	Powdered, bbls.....lb	.03	.03½	.03
1917	.05½	.04	.04	Chlorine, cyls 1c-1 wks contract.....lb.	.08	.09	.08
1918	.07	.07	.07	Liq tank or multi-car lot cyls wks contract.....lb.	.....	.03½	.03½
.19	.20	.20	.20	Chlorobenzene, Mono, 100 lb wks 1c-1 wks.....lb.	.....	.07	.07
.....	1.00	1.00	1.00	Chloroform, tech, 1000 lb drs. lb.	.20	.22	.20
.....	Chloropierin, comml, cyls.....lb.	1.00	1.35	1.00



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Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

have not been any further developments of importance. There has not been any marked increase in business as a result of the advance. As the object of the reduction was to attract new industries to the use of borax, considerable work will be done in this direction which should result in increased sales before many more months are past.

Calcium Acetate — A combination of good consuming demand and a shortage of stocks in sellers hands have forced an advance in price to \$4.00 100 lbs. All through the month of July the market had been strong and the advance was not unlooked for. Consuming interest continues good following the advance.

Calcium Arsenate — As the season continues rather delayed prices have declined somewhat and quotations are now at 6c @ 7c lb.

Calcium Chloride — July of the current year again surpassed July of any previous year from the point of sales volume. Now what we are experiencing protracted periods of war weather the season is at its height and domestic manufacturer predict a total volume for the season even in excess of their estimates of what would be sold, which figure was well in excess of sales for last year. Solid is quoted at \$20.00 ton and flake at \$25.00 ton.

Carnauba Wax — During the past month declines in price have been noted in practically all grades due to lack of buying interest. Florentine is now at 55c @ 56c lb.; No. 1, yellow at 50c @ 51c lb.; No. 2 North Country at 36c @ 37c lb.; No. 2 regular at 47c @ 48c lb.; No. 3 N. C. at 28c @ 29c lb.; and No. 3 chalky at 29c @ 30c lb. Recently the market has been stronger at these lower prices.

Casein — Continues strong but without further price advances during the past month. A more complete discussion of the underlying factors which have influenced the upward trend in this market will be found elsewhere in these pages, but, in brief, demand has increased while production, in general, remains unchanged. This year especially a limited crop is reported in the Argentine, due to unfavorable weather conditions which have prevailed. Standard ground continues to be quoted at 16c @ 16½c lb.

Dextrin — All grades continue strong but without any further changes in price.

Chlorine, Liquid — Has not shown much change over the month. In common with a good many other items business is

1914 July	High	1 9 2 7 Low	Aver.		Current Market	1928 High	Low
.17	.27	.26	.26½	Chrome, Green, CP.....lb.	.26	.29	.26
.03½	.06½	.06½	.06½	Commercial.....lb.	.06½	.11	.06½
.11	.17½	.16½	.16½	Yellow.....lb.	.15½	.16½	.15½
.....	.05	.04½	.04½	Chromium, Acetate, 8% Chrome	.04½	.05½	.04½
1918	.05½	.05½	.05½	bbls.....lb.	.....	.05½	.05½
.....	.27	.27	.27	20° soln, 400 lb bbls.....lb.	.....	.28	.27
.....	.34½	.34½	.34½	Fluoride, powd, 400 lb bbl.....lb.	.27	.28	.27
.....	9.50	9.00	9.08	Oxide, green, bbls.....lb.	.34½	.35½	.34½
1.00	2.10	2.10	2.10	Coal tar, bbls.....bbl	9.00	9.50	9.00
.48	.92	.77	.85½	Cobalt Oxide, black, bags.....lb.	2.10	2.22	2.10
.42	.92	.77	.87½	Cochineal, gray or black bag.....lb.	.84	.87	.84
13.75	13.57½	12.90	12.97	Teneriffe silver, bags.....lb.	.....	.86	.86
.13½	.16½	.16½	.16½	Copper, metal, electro.....100 lb.	14.75	14.75	12.90
.....	.28	.28	.28	Carbonate, 400 lb bbls.....lb.	.16½	.17½	.16½
.....	.48	.48	.48	Chloride, 250 lb bbls.....lb.	.....	.28	.28
.....	.16½	.16½	.16½	Cyanide, 100 lb drs.....lb.	.48	.50	.48
.....	.18	.17	.18	Oxide, red, 100 lb bbls.....lb.	.16½	.17	.16½
4.00	5.00	4.75	4.91½	Sub-acetate verdigris, 400 lb	.....	.19	.18
13.00	17.00	13.00	13.33½	bbls.....lb.	.18	.19	.18
.....	1.25	1.25	1.25	Sulfate, bbls c-1 wks.....100 lb.	.....	5.30	5.30
.80	.40	.40	.40	Copperas, crys & sugar bulk	13.00	14.00	14.00
.....	42.00	20.00	33.75	c-1 wks.....ton	1.25	1.35	1.35
26.50	35.00	21.50	30.38	Sugar, 100 lb bbls.....100 lb.	.....	.42	.40
.....	.23½	.27	.22	Cotton, Soluble, wet, 100 lb	.40	.42	.40
53	.40	.40	.40	bbls.....lb.	.....	.27½	.26
1918	.20	.20	.20	Cottonseed, S.E. bulk c-1.....ton	.....	.19	.17
1918	.25	.25	.25	Meal S.E. bulk.....ton	.....	.23	.21
.....	.17½	.17½	.17½	7% Amm., bags mills.....ton	36.00	37.00	36.00
.07½	.17	.16	.16½	Cream Tartar, USP, 300 lb	.....	.26	.27½
.05	.18½	.15	.18	bbls.....lb.	.26	.27½	.26
.....	.05	.05½	.05½	Creosote, USP, 42 lb clys.....lb.	.17	.19	.17
.....	1.82½	1.67½	1.78½	Oil, Natural, 50 gal drs.....gal.	.21	.23	.21
.....	3.92	3.77	3.84½	10-15% tar acid.....gal.	.25	.28	.25
3.00	3.87	3.72	3.78½	25-30% tar acid.....gal.	.17½	.20	.17½
.05½	.08½	.08½	.08½	Cresol, USP, drums.....lb.	.16	.17	.16
.05½	.08½	.08½	.08½	Cudbear, English.....lb.	.....	.18½	.18½
.....	.08½	.08	.08	Cutch, Rangoon, 100 lb bales.....lb.	.06	.07	.06
.....	3.80	3.80	3.80	Borneo, Solid, 100 lb bale.....lb.	.....	1.70	1.75
.....	2.95	2.85	2.93½	Cyanamide, bulk c-1 wks Amm.	.....	5.12	5.12
.....	3.25	3.25	3.25	Dextrin, corn, 140 lb bags 100 lb.	4.92	5.12	5.12
.....	.31½	.29½	.30½	White, 130 lb bgs.....100 lb.	4.87	5.07	5.07
.....	.55	.55	.55	Potato, yellow, 220 lb bgs.....lb.	.08	.09	.08
.....	.23	.23	.23	White, 220 lb bags 1c-1.....lb.	.08	.09	.08
.....	2.15	2.15	2.15	Tapioca, 200 lb bags 1c-1.....lb.	.08	.08½	.08
1918	.55	.55	.55	Diaminophenol, 100 lb kegs.....lb.	.....	3.80	3.80
.....	.20	.20	.20	Diamylphthalate, drs wks.....gal.	2.85	2.90	2.85
.....	.64	.64	.64	Dianisidine, 100 lb kegs.....lb.	.....	.28	.28
.....	.25	.25	.25	Dibutyltartrate, 50 gal drs.....lb.	.....	.31½	.29½
.....	.30	.30	.30	Dibutylphthalate, wks.....lb.	.....	.65	.65
.....	2.60	2.60	2.60	Diechloromethane, drs wks.....lb.	.....	.25	.23
1918	.32	.30	.31½	Diethylamine, 400 lb drs.....lb.	.....	2.15	2.15
.....	.45	.45	.45	Diethyl carbonate, drs.....gal.	1.85	2.00	1.85
1918	.15½	.15	.15½	Diethylaniline, 850 lb drs.....lb.	.....	.60	.55
.....	.18	.18	.18	Diethyleneglycol, drs.....lb.	.10	.12	.10
.....	.15	.15	.15	Mono ethyl ether, drs.....lb.	.25	.35	.25
.....	.32	.32	.32	Diethylthotoluidin, drs.....lb.	.64	.67	.64
1918	.31	.31	.31	Diethyl phthalate, 1000 lb	.....	.24	.26
1918	.18	.15	.17½	drums.....lb.	.....	.35	.30
.....	1.05	.85	.88	Diethylsulfate, technical, 50 gal	.....	2.62	2.62
1918	.48	.45	.45½	drums.....lb.	.30	.32	.30
.....	.26	.26	.26	Dimethylamine, 400 lb drs.....lb.	.....	.50	.45
45.00	49.00	41.00	45.25	Dimethylaniline, 340 lb drs.....lb.	.45	.50	.45
.02½	.04	.04	.04	Dimethylsulfate, 100 lb drs.....lb.	.15½	.16½	.15½
1918	.84	.72	.67½	Dinitrobenzene, 400 lb bbls.....lb.	.18	.19	.18
.....	1.00	2.00	1.75	Dinitrochlorine, 300 lb bbl.....lb.	.....	.16	.15
.22	.45	.37	.43	Dinitrochlorobenzene, 400 lb	.....	.32	.34
.....	.90	.90	.90	bbls.....lb.	.31	.32	.31
.....	1.10	1.03	1.08	Dinitronaphthalene, 350 lb bbls	.....	.19	.18
.....	1.05	1.05	1.05	lb.....lb.	.....	.85	.75
.....	.50	.50	.50	Dinitrophenol, 350 lb bbls.....lb.	.....	.11	.07
.....	.22	.22	.22	Dinitrotoluene, 300 lb bbls.....lb.	.....	.70	.70
1918	.30	.30	.30	Diorthotolylguanidine, 275 lb	.....	.22	.22
.....	.45	.45	.45	bbls wks.....lb.	.30	.35	3.50
.....	.70	.70	.70	Lactate, drums works.....lb.	.....	.30	.30
.....	.75	.75	.75	Methyl Ketone, 50 gal drs.....lb.	.45	.55	.45
.....	.15	.11	.11½	Oxalate, drums works.....lb.	.30	.36	.30
.....	.30	.30	.30	Oxybutyrate, 50 gal drs. wks. lb.	.....	.70	.70
.....	.75	.75	.75	Ethylene Bromide, 600 lb dr.....lb.	.....	.85	.75
.....	.11	.11	.11½	Chlorhydrin, anhydrous, 50 gal	.....	.65	.65
.....	.75	.75	.75	drums.....lb.	.....	.25	.25
.....	.30	.30	.30	Dichloride, 50 gal drums.....lb.	.....	.40	.40
.....	.75	.75	.75	Glycol, 50 gal drs wks.....lb.	.....	.27	.31
.....	.75	.75	.75	Mono Butyl Ether drs. wks.	.....	.20	.24
.....	.75	.75	.75	Mono Ethyl Ether drs. wks.	.....	.23	.26
.....	.75	.75	.75	dr. wks.....lb.	.....	.62	.62
1918	.62	.62	.62	Ethylidenaniline.....lb.	.....	25.00	25.00
8.00	20.00	20.00	20.00	Feldspar, bulk.....ton	15.00	21.00	21.00
.....	15.00	15.00	15.00	Powdered, bulk works.....ton	.....	.07½	.09
.....	.07½	.07½	.07½	Ferric Chloride, tech, crystal	.....	.09	.09
.....	.07½	.07½	.07½	475 lb bbls.....lb.	.....	.09	.07½

News Notes

Factories:
Niagara Falls, N. Y.
Murphysboro, Ill.
Owego, N. Y.
Jersey City, N. J.

"Over a Century of Service and Progress"

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1816

AUGUST, 1928

1928

CHEMICAL BUSINESS RUNNING ABOUT NORMAL

While the hot and rainy weather during July has had its effect on business, coupled with the usual Summer dullness, vacations, etc., we are pleased to say that we consider business as good as might be expected. Things are running along smoothly, and a good consuming interest in industrial chemicals and allied products is being shown.

We feel that a rather satisfactory market prevails and this in face of what appeared to be disquieting indications when the year opened. It now seems to be quite clearly established that the fear and timidity formerly associated with presidential election years exists now only in myth and that business is too well established and on too solid a foundation to be upset by unnecessary causes. We look for a continuance of good business over the balance of the year with indications that we will have a steady market offering possibilities of trading with confidence.

Acetate of Soda is still scarce with the market firm.

Barium Hydrate has advanced $\frac{1}{2}$ c per pound.

Blue Vitriol. Sharp advances have taken place in the price because of a demand far above that anticipated. This is due to a considerable extent to the consuming interests not covering their requirements earlier in the year. It has caused a great scarcity with the consequent higher prices.

Borax and Boric Acids. The new prices have brought about an increased interest from consumers and heavier withdrawals. The schedule of prices to-day are the lowest they have ever been in a great many years.

Citric and Tartaric Acids, because of seasonal demand, are moving well.

Formaldehyde. A decline in the price of this commodity took place a couple of months ago owing to lower Methanol costs. Methanol prices have again advanced necessitating an increase in the price of **Formaldehyde** $\frac{1}{2}$ c per pound.

Naphthalene Flakes and Balls have also been in very active demand with supplies not equal to buyers' needs, but prices have not advanced to any appreciable extent.

Red and Yellow Prussiate of Potash. Prices are firm with an upward tendency.

* * * *

FORTY YEARS AGO

In 1885, Hasbrouck Innis, son of George Innis, acquired ownership of this Company, then operating under the name of Gifford, Sherman and Innis. He changed the name to Innis and Company, and continued in active charge of the Company's affairs, with Mr. George V. Sheffield, our present vice-president and treasurer, as one of his associates.

* * * *

The Johnstown flood in 1889 is paralleled by the recent Mississippi floods with tremendous property damage and loss of life. When will congress act to prevent another recurrence?

* * * *

Grover Cleveland as President was confronted with such national problems as railroad building and financing by federal loan and land grants, restrictive immigration of Chinese and others; American fishing rights in British North American waters and Venezuelan Arbitration regarding property rights of foreigners. Shipping treaties were made with France and Germany. Civil Service Rules were constructively revised.

EDITORIAL

The Spirit of The Hive

"One Bee Working Alone Can Make No Honey"—Materlinck

It is only by co-ordinated effort, working together for the good of other bees and for the prosperity of the hive and its future, that bees develop the high order of intelligence, which the great Belgian writer calls "The Spirit of the Hive".

In Materlinck's book "The Life of the Bee" is a powerful lesson for every organization; for every man at the head of a business; for every department head and for every individual worker. For should a bee go off alone and gorge of the sweetness, bringing nothing back for the "Common stock" the workers would promptly sting the offender to death. For it is only by concerted action that the bee or the human being is successful.

In the business world, in our Great Hives of Industry, we call the "Spirit of the Hive" by various names: *Esprit de corps*, "Co-operation", "Loyalty". And best of all "*Good Fellowship*", for that embraces all of the terms that mean working together, and goes a "seven league boot step" further in bringing, not only success, but Friendship and Happiness.

* * * *

A Bee travels over 43,000 miles in gathering a pound of Honey—and yet a man will walk only a mile for a Camel.

* * * *

UNFAIR competition, embracing all acts characterized by bad faith, deception, fraud or oppression, including commercial bribery, is wasteful, despicable and a public wrong. Business should rely on its success on the excellence of its own service.

* * * *

The Moral

Father: "Do you know what happens to little boys who use bad language when they play marbles?"

Boy: "Yes, sir, they grow up and play golf."

Prices Current and Comment

Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

a bit retarded by the general feeling of inertia which seems to have gripped buyer and seller alike during the hot weather. No particular change in price or position of the market is looked for until well into the Fall when the 1929 contract price will be announced.

Copper Carbonate — The season has been at its height during the past month and sellers were quite active in filling orders. There has not been any revision in the price which holds steady at 16½¢ @ 17c lb. as to seller and quantity.

Copper Sulfate — With most of this year's domestic business accounted for, copper sulfate has retired from the lime light a bit. There is still a fair scattering of business to be taken care of and shipments against commitments continue but in general conditions are quieter, and will be until the export demand sets in early in the Fall.

Egg Yolk — There was a brisk movement of dried egg yolk from Tientsin, China, during the first three months of 1928, according to the Department of Commerce. Compared with 137,600 pounds of this commodity exported from Tientsin during the first quarter of 1927, there were 498,000 pounds exported during the first quarter of 1928. While only 48,600 pounds of dried egg yolk, valued at \$20,618 were declared at Tientsin during the first quarter of 1927 for exportation to the United States, 172,800 pounds, valued at \$70,879 were declared during the first quarter of 1928. The bulk of these shipments were made up of granular yolk from Honan Province. This increase in supply available here, as indicated by the previous figures, is in a large measure responsible for the decline in price which has taken place during the past month. Quotations are now at 75c @ 78c lb.

Ethyl Acetate — Sales were brisk throughout the month and sellers are having no trouble in getting their asking price of 82c @ 85c gal. as to quantity.

Glycerin — Has continued to be thoroughly routine over the entire month of July. A sale was reported recently at 12¼¢ lb. for dynamite, but in general sellers are asking the price of 12½¢ lb. which prevailed last month. There is no consumer interest as the dynamite group is not expected to be in the market for about two months and then purchases probably will not be heavy. Other grades of glycerin are in much the same boat.

Gums — All grades of Batavia are lower due to lack of demand. Damar standard is now at 22½¢ @ 23c lb.; E

1914 July	High	1 9 2 7 Low	Aver.		Current Market	1928 High	Low
2.80	5.60	4.15	4.69	Fish Scrap, dried, wks. unit	5.50&10	5.50&10	5.25&10
2.50	3.50	4.24	3.56½	Acid, Bulk 7 & 3½% delivered	4.75&50	4.75&50	47.5&50
.40	1.10	.90	1.01½	Norfolk & Balt. basis. unit	1.10	1.15	1.15
.40	1.10	.85	.89	Flavine, lemon, 55 lb cases. lb.	1.10	1.15	1.10
.....	25.00	25.00	25.00	Orange, 70 lb cases. lb.	1.10	1.15	1.10
.....	.....	.....	.....	Flavseed. lb.	.....	.....	.....
.....	.....	.....	.....	Fluorspar, 95%, 220 lb bags. lb.	.....	.....	.....
.....	.....	.....	.....	Ex-dock. ton	.....	.....	.....
.....	.39	.39	.39	Formaldehyde, aniline, 100 lb.	25.00	25.00	25.00
.08½	.11½	.08½	.10	drums. lb.	.39	.42	.39
.....	.02½	.02½	.02½	USP, 400 lb bbls 1c-1 wks. lb.	.08½	.09	.08½
.....	15.00	15.00	15.00	Fossil Flour. lb.	.02½	.04	.02½
.....	25.00	25.00	25.00	Fullers Earth, bulk, mines. ton	15.00	20.00	20.00
.....	.17½	.17½	.17½	Imp. powd c-1 bags. ton	25.00	30.00	30.00
1.10	1.69	1.35	1.59	Furfural, 500 lb drums. lb.	.17½	.19½	.17½
.01½	.04	.04	.04	Fusel Oil, 10% impurities. gal.	1.35	1.35	1.35
.....	.20	.20	.20	Fustie, chips. lb.	.04	.05	.04
.06	.09	.09	.09	Crystals, 100 lb boxes. lb.	.20	.22	.20
.08	.20	.20	.20	Liquid, 50°, 600 lb bbls. lb.	.09	.10	.09
12.00	30.00	30.00	30.00	Solid, 50 lb boxes. lb.	.20	.23	.20
1918	.50	.50	.50	Sticks. ton	30.00	32.00	32.00
.12	.20	.20	.20	G Salt paste, 360 lb bbls. lb.	.50	.52	.50
.04½	.08	.08	.....	Gall Extract. lb.	.20	.21	.20
1917	.12	.12	.12	Gambier, common 200 lb cs. lb.	.08	.09	.08
.05½	.23	.11	.17	25% liquid, 450 lb bbls. lb.	.12	.14	.12
.....	.45	.30	.43½	Singapore cubes, 150 lb bg. lb.	.11	.12	.11
.....	3.14	3.14	3.14	Gelatin, tech, 100 lb cases. lb.	.45	.50	.45
.....	.60	1.05	1.05	Bags, c-1 NY. 100 lb.	3.14	3.24	3.24
.....	.....	.....	.....	Glauber's Salt, tech, 250 lb bags	.70	1.05	.70
.....	3.24	3.24	3.24	c-1 wks. 100 lb.	3.24	3.34	3.34
.....	3.14	3.14	3.14	Glucose (grape sugar) dry 70-	.....	.....	.....
.12	.20	.20	.20	80° bags c-1 NY. 100 lb.	3.14	3.14	3.14
.18	.22	.22	.22	Tanner's Special, 100 lb bags	.20	.24	.20
.19½	.29	.22	.24	Glue, medium white, bbls. lb.	.22	.26	.22
.19½	.25	.17	.21½	Pure white, bbls. lb.	.15	.15	.15
.....	.....	.....	.....	Glycerin, CP, 550 lb drs. lb.	.12	.12	.12
.....	15.00	15.00	15.00	Dynamite, 100 lb drs. lb.	.08½	.08½	.08½
.....	.05	.05	.05	Saponification, tanks. lb.	.07½	.07½	.07½
.....	.....	.....	.....	Soap Lye, tanks. lb.	15.00	35.00	35.00
.....	.....	.....	.....	Graphite, crude, 220 lb bgs. ton	.06	.09	.06
.....	.....	.....	.....	Flake, 500 lb bbls. lb.	.....	.....	.....
Gums							
.....	.03½	.03½	.03½	Gum Accroides, Red, coarse and	.03½	.04½	.03½
.....	.06	.06	.06	fine 140-150 lb bags. lb.	.06	.06½	.06
.....	.18	.18	.18	Powd, 150 lb bags. lb.	.18	.20	.18
.25	.40	.35	.39	Yellow, 150-200 lb bags. lb.	.35	.40	.35
.....	.60	.50	.57½	Animi (Zanzibar) bean & pea	.50	.55	.50
.05	.09	.09	.09	250 lb cases. lb.	.09	.12	.09
.15	.15	.15	.15	Glassy, 250 lb cases. lb.	.15	.17	.15
36.00	55.00	55.00	55.00	Asphaltum, Barbadoes	58.00	65.00	65.00
.17½	.26½	.26½	.25	(Manjak) 200 lb bags. lb.	.22½	.23	.22½
.....	.10½	.07	.10	Egyptian, 200 lb cases. lb.	.10½	.11	.10½
.....	.18½	.17½	.18½	Gilsonite Selects, 200 lb bags	.16	.16½	.16
.....	.14	.09	.13	Damar Batavia standard 136,	.13	.13½	.13
.14	.22½	.21	.22½	lb cases. lb.	.29½	.30	.29½
.08	.14	.11	.12	Batavia Dust, 160 lb bags. lb.	.23	.23½	.23
.34	.35	.30	.30	E Seeds, 136 lb cases. lb.	.13½	.14	.13½
.....	.14	.12	.13	F Splinters, 136 lb cases and	.....	Nom.	.35
.12	.08½	.08½	.08½	bags. lb.	.14	.15	.14
.18	.12½	.12½	.12½	Singapore, No. 1, 224 lb cases. lb.	.08½	.09	.08½
.25	.35	.35	.35	No. 2, 224 lb cases. lb.	.12½	.14	.12½
.....	.....	.....	.....	No. 3, 180 lb bags. lb.	.35	.36	.35
.....	.....	.....	.....	Benzoil Sumatra, technical, 120	.60	.62	.58
.15	.16	.16	.16	lb cases. lb.	.....	.....	.....
.....	.15	.15	.15	Copal Congo, 112 lb bags, clean	.14	.15	.14
.....	.14½	.13	.13½	opaque. lb.	.14	.15	.14
.....	.16	.16	.16	Dark, amber. lb.	.08½	.09	.08½
.08½	.14	.12	.13	Light, amber. lb.	.12½	.14	.12½
.....	.07½	.07½	.07½	Water white. lb.	.35	.36	.35
.....	.....	.....	.....	Mastic. lb.	.60	.62	.58
.....	.17	.17	.17	Manila, 180-190 lb baskets	.....	.....	.....
.....	.....	.....	.....	Loba A. lb.	.16	.16½	.16
.13½	.29	.25	.26½	Loba B. lb.	.15	.15½	.15
.07	.19	.13	.15½	Loba C. lb.	.13	.13½	.13
.....	.14	.13	.13½	Pale bold, 224 lb cs. lb.	.16	.18	.16
.....	.13	.12	.12½	Pale nubs. lb.	.12	.12½	.12
.....	.13	.11	.11	East Indies chips, 180lb bags. lb.	.08	.08½	.07½
.50	.67½	.57	.63½	Pale bold, 180 lb bags. lb.	.17	.17½	.17
.32	.44½	.38	.41	Pale nubs. lb.	.14	.14½	.14
.07½	.14½	.10	.12	Pontianak, 224 lb cases. lb.	.25	.25½	.25
.....	.42	.38	.40	Pale bold gen No. 1. lb.	.13	.14½	.13
.....	.31½	.24½	.25	Pale gen chips spot. lb.	.13½	.14	.13
.19	.27	.25	.25	Elemi, No. 1, 80-85 lb cs. lb.	.13	.14	.13
1917	.12	.12	.12	No. 2, 80-85 lb cases. lb.	.12	.13	.12
1917	.09	.09	.09	No. 3, 80-85 lb cases. lb.	.12	.13	.12
.02½	.03½	.03½	.03½	Kauri, 224-226 lb cases No. 1	.50	.57	.50
.....	16.00	16.00	16.00	lb. lb.	.35	.38	.35
.....	.60	.45	.56	No. 2 fair pale. lb.	.10	.12	.10
.....	.80	.62	.72	Brown Chips, 224-226 lb	.38	.40	.38
2.60	3.35	2.75	3.08	cases. lb.	.....	.....	.....
.....	.....	.....	.....	Bush Chips, 224-226 lb	.....	.....	.....
.....	.....	.....	.....	cases. lb.	.24½	.26	.24½
.....	.....	.....	.....	Pale Chips, 224-226 lb cases	.27	.28	.26
.....	.....	.....	.....	lb bags & 300 lb casks. lb.	.17	.20	.17
.....	.....	.....	.....	Sandarac, prime quality, 200	.....	.11	.11
.....	.....	.....	.....	lb bags & 300 lb casks. lb.	.03½	.03½	.03½
.....	.....	.....	.....	Hematine crystals, 400 lb bbls. lb.	16.00	16.00	16.00
.....	.....	.....	.....	Paste, 500 bbls. lb.	.....	.60	.60
.....	.....	.....	.....	Hemlock 25%, 600 lb bbls wks. lb.	.62	.65	.62
.....	.....	.....	.....	Bark. ton	4.00	4.00	4.00
.....	Hexalene, 50 gal drs wks. lb.
.....	Hexamethylenetetramine, drs. lb.
.....	Hoof Meal, fob Chicago. unit



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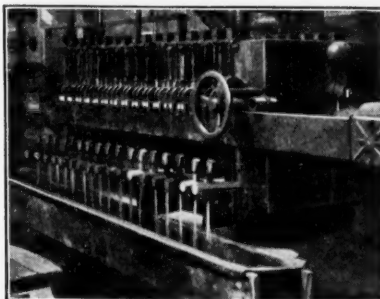
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165 Filtrations obtained with Resisto-Filters on the above press filtering 20% boiling sulfuric acid.



250 Filtrations obtained with Resisto-Filters on the above lead-lined press filtering 35% sulfuric acid at 35° C.

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Size of Du Pont Resisto-Filters: These new filters are not sold in the bolt but are shipped as individual press cloths of suitable size for the press. They are now supplied in two sizes—thirty inch and thirty-six inch and are adapted to the Plate and Frame, Sweetland, American, and other types of filter presses. On special orders of one hundred pieces or more, small size and odd size cloths will be made.

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seeds at 16c @ 16½c lb.; and F splinters at 13c @ 13½c lb. Benzoin Sumatra is now nominal in price there being no stocks available in the domestic market. Mastic has advanced during the past month and is now quoted at 60c @ 62c lb. Factors here state that it is quite likely to go to 65c lb. as it is very scarce, the old crop is practically exhausted and new crop will not be available here for about four months. The same situation exists in sandarac. Supplies of new crop will not be available before October and prices have advanced to 27c @ 28c lb.

Mangrove Bark — Increased supplies have become available and the market has declined to \$38 @ \$40 ton.

Mercury — The spot market has been quite routine over the month and as a result the market eased off a bit and was quoted at the end of the month at \$120.00 flask. Consuming interest has not been accelerated by the announcement of a combination selling organization in Europe to handle both the Spanish and Italian output. Sellers on this market indicate that important developments in the situation may be looked for before the middle of the current month.

Methanol — As has been rumored for the past several weeks the market took an upward turn during the latter part of the month and both synthetic and denatured grades are sharply higher in all directions. Denatured is held at 50c gal. in tanks and ranges to 55c gal. as to packing. Consumers seem willing to pay and as is usually the case the demand on the rising market is on the increase.

Myrobalans — J2 and R2 have declined slightly and are now quoted at \$37 @ \$38 ton.

Phenol — Sellers admit to a slackened business, but this is not due to the season as business has been routine for some months past. Sellers seem reticent to name any definite figure as the market price, stating only that there have not been enough sales to warrant giving an authentic price.

Phosphate Acid — Producers have finally decided to raise the price to \$10.00 ton for the 16 per cent. They have asserted all along that the \$9 price did not even pay costs of production and so the advance in price is not surprising.

Potash Caustic — There is talk of an upward revision in the price, back to the level of 7½c lb. in good sized quantities. No definite move has been made in this direction, but such a step should not be received with surprise.

1914 July	High	1927 Low	Aver.		Current Market	1928 High	Low
.....	3.90	3.00	3.57	South Amer. to arrive... unit	.....	.....	.....
.....	.30	.22	.24	Hydrogen Peroxide, 100 vol, 140 lb cys. lb.	.24	.26	.24
1917	.12	.12	.12	Hpyernic, 51°, 600 lb bbls. lb.	.12	.15	.12
.58	1.28	1.20	1.27	Indigo Madras, bbls. lb.	1.28	1.30	1.28
.....	.14	.14	.14	20% paste, drums. lb.	.14	.15	.14
.....	.07½	.07½	.07½	Solid, powder. lb.	.07½	.08	.07½
				Iron Chloride, see Ferric or Ferrous			
.04	.09	.09	.09	Iron Nitrate, kegs. lb.	.09	.10	.09
1.12½	2.50	2.50	2.50	Coml, bbls. 100 lb.	2.50	3.25	2.50
.....	.10	.10	.10	Oxide, English. lb.	.10	.12	.10
.....	.02½	.02½	.02½	Red, Spanish. lb.	.02½	.03½	.02½
.....	.85	.85	.85	Isopropyl Acetate, 50 gal drs. gal.	.85	.90	.85
.11½	.29	.17	.19	Japan Wax, 224 lb cases. lb.	.....	.17	.17
.....	60.00	60.00	60.00	Kieselguhr, 95 lb bgs NY. ton	60.00	70.00	60.00
.....	14.00	13.00	13.33	Lead Acetate, bbls wks. 100 lb.	.....	70.00	60.00
				White crystals, 500 lb bbls wks. 100 lb.	13.00	13.50	13.00
9.12½	14.00	13.00	13.33	Arsenate, drs 1c-1 wks. lb.	.13	.15	.13
.04½	.15½	.13½	.13	Metal, c-1 NY. 100 lb.	.....	6.10	6.25
3.90	7.80	6.20	6.78	Nitrate, 500 lb bbls wks. lb.	.....	.14	.14
.07½	.14	.14	.14	Oleate, bbls. lb.	.17½	.18	.17½
.17½	.17½	.17½	.17½	Oxide Litharge, 500 lb bbls. lb.	.....	.08½	.08½
.....	.10½	.08½	.09	Red, 500 lb bbls wks. lb.	.....	.09½	.09½
.05½	.11½	.09½	.10	White, 500 lb bbls wks. lb.	.....	.09	.09
.05½	.09½	.09	.09½	Sulfate, 500 lb bbls wk. lb.	.....	.08½	.08½
.05	.09	.08½	.08½	Lime, ground stone bags. ton	4.50	4.50	4.50
.....	4.50	4.50	4.50	Live, 325 lb bbls wks. 100 lb.	.....	1.05	1.05
.....	1.05	1.05	1.05	Lime Salts, see Calcium Salts	.....	1.05	1.05
1918	.15	.15	.15	Lime-Sulfur soln bbls. gal.	.15	.17	.15
				Lithopone, 400 lb bbls 1c-1 wks. lb.	.....	.06½	.06½
.03½	.06½	.06½	.06½	Logwood, 51°, 600 lb bbls. lb.	.08½	.08½	.08½
.05	.08½	.08½	.08½	Chips, 150 lb bags. lb.	.03	.03½	.03
.01½	.03	.03	.03	Solid, 50 lb boxes. lb.	.....	.12½	.12½
.06	.12	.12	.12	Sticks. ton	26.00	27.00	26.00
15.00	26.00	26.00	26.00	Lower grades. lb.	.07½	.08	.07½
.....	.07½	.07½	.07½	Madder, Dutch. lb.½	.....	.30	.30
.12	.30	.30	.30	Magnesite, calc, 500 lb bbl. ton	48.00	50.00	48.00
30.00	48.00	48.00	48.00				

Magnesium

1918	.06½	.06	.06	Magnesium Carb, tech, 70 lb bags NY. lb.	.06	.06½	.06½	.06
.....	37.00	37.00	37.00	Chloride flake, 375 lb drs c-1 wks. ton	.....	37.00	37.00	37.00
.....	33.00	33.00	33.00	Imported shipment. ton	.....	33.00	33.00	33.00
.....	31.00	31.00	31.00	Fused, imp, 900 lb bbls NY ton	.....	31.00	31.00	31.00
.....	.10	.10	.10	Fluosilicate, crys, 400 lb bbls wks. lb.	.10	.10½	.10½	.10
.....	.42	.42	.42	Oxide, USP, light, 100 lb bbls. lb.	.....	.42	.42	.42
.....	.50	.50	.50	Heavy, 250 lb bbls. lb.	.....	.50	.50	.50
.....	.12½	.09½	.11½	Silicofluoride, bbls. lb.	.09½	.10½	.10½	.09½
.....	.23	.23	.23	Stearate, bbls. lb.	.23	.25	.25	.23
.20	.24	.24	.24	Manganese Borate, 30%, 200 lb bbls. lb.	.....	.24	.24	.24
.06	.08	.08	.08	Chloride, 600 lb casks. lb.	.08	.08½	.08½	.08
.....	.05	.04½	.04½	Dioxide, tech (peroxide) drs. lb.	.....	.40	.50	.35
.....	.03	.03	.03	Ore, powdered or granular	.35	.40	.50	.35
.....	.04	.04	.04	75-80%, bbls. lb.	.03	.03½	.03½	.03
.....	.05	.05	.05	80-85%, bbls. lb.	.04	.04½	.04½	.04
.....	.07	.07	.07	85-88%, bbls. lb.	.05	.05½	.05½	.05
.....	.03½	.03½	.03½	Sulfate, 550 lb drs NY. lb.	.07	.07½	.07½	.07
.....	39.00	34.00	37.54	Mangrove 55%, 400 lb bbls. lb.	.03½	Nom.	Nom.	.03½
8.00	10.00	10.00	10.00	Bark, African. ton	.38	40.00	45.00	38.00
1916	129.00	99.00	119.09	Marble Flour, bulk. ton	10.00	12.00	12.00	10.00
1918	.72	.72	.72	Mercury metal. 75 lb flask	120.00	121.00	127.50	121.00
1918	1.70	1.70	1.70	Meta-nitro-aniline. lb.	.72	.74	.74	.72
1918	.90	.90	.90	Meta-nitro-para-toluidine 200 lb bbls. lb.	1.70	1.80	1.80	1.70
1918	.72	.72	.72	Meta-phenylene-diamine 300 lb bbls. lb.	.90	.94	.94	.90
.4	.....	.....	.....	Meta-toluene-diamine, 300 lb bbls. lb.	.72	.74	.74	.72
.45	.80	.55	.69	Methanol, (Wood Alcohol), drs 95%. gal.	.46	.50	.55	.46
.50	.87	.57	.74½	97%, drums 1c-1. gal.	.47	.50	.57	.47
.....	.....	.....	.....	Pure, drums 1c-1. gal.	.44	.48	.58	.44
.....	.....	.....	.....	Synthetic, drums 1c-1. gal.	.48	.50	.58	.48
.....	.80	.75	.78	Denat. grd. tanks. gal.	.50	.55	.75	.45
.....	.95	.95	.95	Methyl Acetate, drums. gal.	.....	.95	.95	.95
.....	.88	.75	.66	Acetone, 100 gal drums. gal.	.68	.70	.80	.68
.....	1.00	.85	.92½	Anthraquinone, kegs. lb.	.85	.95	.95	.85
.....	.55	.55	.55	Chloride, 90 lb cyl. gal.	.55	.60	.60	.55
.....	.03½	.03½	.03½	Mica, dry grd. bags wks. lb.	65.00	80.00	80.00	65.00
.....	.05½	.05½	.05½	Wet, ground, bags wks. lb.	110.00	115.00	115.00	110.00
.....	3.00	3.00	3.00	Michler's Ketone, kegs. lb.	.....	3.00	.....	.....
.....	.70	.70	.70	Monochlorobenzene, drums see Chlorobenzene, mono. lb.	.70	.75	.75	.70
1918	1.05	1.05	1.05	Monochlorotoluidin, drs. lb.	.....	1.05	1.05	1.05
.....	3.95	3.95	3.95	Monomethylamine, 900 lb dr. lb.	.....	1.05	1.05	1.05
.06½	.06½	.06½	.06½	Monomethylparaminosulfate 100 lb drums. lb.	3.95	4.20	4.20	3.95
.....	.04	.04	.04	Montan Wax, crude, bags. lb.	.06½	.07	.07	.06½
.....	.08	.08	.08	Myrobalans 25%, liq bbls. lb.	.04½	.04½	.04½	.04½
27.00	43.50	41.00	42.00	50% Solid, 50 lb boxes. ton	.08	.08½	.08½	.08
27.00	37.00	23.50	35.24	J 1 bags. ton	44.00	45.50	50.00	42.50
27.00	37.00	30.00	36.62	J 2 bags. ton	.37	38.00	40.00	34.50
.....	.10	.21	.18	R 2 bags. ton	.37	38.00	40.00	34.50
				Naphtha, v. m. & p. (deodorized) bbls. gal18	.18	.18

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Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

Potash Chlorate — A drastic drop in the carload price of domestic chlorate to 6½c lb. early in August was the opening gun of another battle between domestic and importing factions. One importer with a large account in Germany has been particularly active in cutting under the prevailing market of recent weeks and the sharp reduction in price has unquestionably been made to shut this imported competition out of this market. No increase in business is expected as a result of this controversy and its attendant lower prices as the market is more or less cut and dried, so the buyers seem the big gainers.

Rosin — Prices have gradually declined during the past month but undertones are firm. All grades are from 20c @ 60c unit lower in price, but factors are quite satisfied and expect advancing prices as soon as buying interest increases.

Shellac — Bone dry and superfine have advanced during the past month and the general tendency throughout the entire market is upward. Most factors attribute this to the fact that this year's Bysacki crop will not amount to 300,000 packages, but will be nearer 200,000 packages. Stocks in this country are small and while considerable shellac is on the way from India, there probably will be no surplus for some time to come. Spot supplies will probably be scarce for about three months. Further price advances depend to a large extent upon trade demands. For the present consumers are holding off for lower prices.

Soda Ash — In common with most items the withdrawals on contracts as well as spot business has fallen off a bit. This is not unusual with some of the consuming industries running on curtailed schedules and sellers are satisfied with the volume that is moving.

Sodium Chlorate — One American manufacturer is doing a land office business as a result of the recent development of chlorate as a weed killer in the mid-west. Stocks have been cleaned out as a result of the heavy demand from the farmers. However, the market has not been advanced from its level of 5¼c lb. to which it was reduced two or three months ago to meet imported competition.

Sodium Nitrate — The market continues weak and prices have declined further to \$2.15 ton. The Producers' Association is now working out a plan for centralized sales and this, in combination with the Chilean Government's promise to subsidize producers against any cut in price by German competitors, is hoped to

1914 July	High	1 9 2 7 Low	Aver.		Current Market	1928 High	Low
.02½	.06	.05½	.05½	Naphthalene balls, 250 lb bbls			
.04½	.04½	.04½	.04½	wks. . . . .	.05½	.06	.05½
.02½	.05	.04½	.04½	Crushed, chipped bgs wks. . . . .	.04½	.04½	.04½
.21	.21	.21	.21	Flakes, 175 lb bbls wks. . . . .	.05	.05	.05
1918	.35	.35	.35	Nickel Chloride, bbls kegs. . . . .	.21	.24	.21
1918	.09	.08½	.08½	Oxide, 100 lb kegs NY. . . . .	.35	.38	.35
1918	.08½	.08	.08½	Salt dbl, 400 lb bbls NY. . . . .	.09	.09½	.09
				Single, 400 lb bbls NY. . . . .	.08½	.09	.08½
	1.25	1.10	1.24	Nicotine, free 40%, 8 lb tins	1.25	1.30	1.25
	1.10	1.10	1.10	cases.	1.10	1.15	1.10
	13.00	13.00	13.00	Sulfate, 10 lb tins.	13.00	14.00	13.00
.06½	.10½	.09½	.09½	Nitro Cake, 500 lb bbls			
.40	.40	.40	.40	Nitrobenzene, redistilled, 1000	.10½	.10½	.10½
.55	.55	.55	.55	lb drs wks. . . . .	.40	Nom.	.40
.50	.50	.50	.50	Nitrocellulose, regular drums	.55	Nom.	.55
3.05	3.60	3.35	3.53	wks. . . . .	.50	Nom.	.50
1918	.25	.25	.25	Low viscosity (soln only)	3.90	4.00	3.35
1918	.14	.14	.14	Grade 2 drums, wks. . . . .	.25	.25	.25
1918	.25	.25	.25	Nitrogenous Material, bulk, unit	.14	.15	.14
1918	.17	.17	.17	Nitronaphthalene, 550 lb bbls . . . . .	.25	Nom.	.25
.08	.03½	.03½	.03½	Nitrotoluene, 1000 lb drs wks. . . . .	.17	.18	.17
.08	.04	.04	.04	Nitrotoluene, 1000 lb drs wks. . . . .	.22	.24	.22
45.00	45.00	45.00	45.00	Chinese, bags. . . . .	.04	.04½	.04
20.00	20.00	20.00	20.00	Powdered, bags.	45.00	50.00	45.00
.07½	.14½	.13	.13½	Oak, tanks, wks.	20.00	23.00	20.00
.220	2.20	2.20	2.20	23-25% liq., 600 lb bbl wk. . . . .	.11½	.12½	.13½
.250	2.50	2.35	2.36½	Oak Bark, liquid.	2.20	2.25	2.25
.60	.60	.60	.60	Whole.	2.35	2.50	2.35
.18	.18	.18	.18	Orange-Mineral, 1100 lb casks	.50	.65	.50
1918	.06	.06	.06	NY. . . . .	.18	.28	.18
1918	.32	.32	.32	Orthoaminophenol, 50 lb kgs. . . . .	.06	.07	.06
1918	.13	.13	.13	Orthoanisidine, 100 lb drs. . . . .	.32	.35	.32
1918	.85	.85	.85	Orthochlorophenol, drums. . . . .	.17	.18	.17
1918	.29	.25	.28	Orthochlorophenol, 350 lb dr. . . . .	.85	.90	.85
1918	.70	.70	.70	Orthotoluidine, 350 lb bbl 1c-1b. . . . .	.29	.31	.29
1918	.16	.16	.16	Orthotropachlorophenol, tins	.70	.75	.70
1918	.07	.07	.07	Osage Orange, crystals. . . . .	.16	.17	.16
.14½	.14½	.14½	.14½	51 deg. liquid. . . . .	.07	.07½	.07
.04½	.06½	.06½	.06½	Powdered, 100 lb bags. . . . .	.14½	.15	.14½
.05½	.07½	.07½	.07½	Paraffin, retd, 200 lb cs slabs	.06½	.06½	.06½
.06½	.08	.08	.08	123-127 deg. M. P. . . . .	.07½	.07½	.07½
1918	.08½	.08½	.08½	128-132 deg. M. P. . . . .	.08	.08½	.08
.29	.26	.26½	.26½	133-137 deg. M. P. . . . .	.08½	.10	.08½
1918	1.00	1.00	1.00	138-140 deg. M. P. . . . .	.20½	.23	.20½
				Para Aldehyde, 110-55 gal drs.	1.00	1.05	1.00
	1.25	1.25	1.25	Aminoacetanilid, 100 lb bg.	1.25	1.30	1.25
	.15	.15	.15	Aminohydrochloride, 100 lb kegs	.15	1.15	1.15
	.50	.50	.50	Aminophenol, 100 lb kegs. . . . .	.60	.65	.60
	.12	.12	.12	Chlorophenol, drums. . . . .	.225	2.50	2.25
	2.25	2.25	2.25	Coumarone, 330 lb drums. . . . .	.17	.20	.17
1918	.17	.17	.17	Cymene, retd, 110 gal dr. . . . .	.60	.55	.60
1918	.53	.50	.50½	Dichlorobenzene, 150 lb bbls	.48	.49	.48
1917	.52	.52	.52	wks. . . . .	.32	.32	.32
	.32	.32	.32	Nitroacetanilid, 300 lb bbls	2.75	2.85	2.75
1918	2.75	2.75	2.75	Nitroaniline, 300 lb bbls wks	.50	.55	.50
1918	.50	.50	.50	Nitrochlorobenzene, 1200 lb drs	.92	.94	.92
	.92	.92	.92	wks. . . . .	.30	.30	.30
1918	.30	.25	.26	Nitro-orthotoluidine, 300 lb	1.15	1.20	1.15
1918	1.20	1.15	1.18	bbls . . . . .	.40	.41	.40
	.40	.40	.40	Nitrophenol, 185 lb bbls . . . . .	.20	.22	.20
	.20	.18	.19	Nitrosodimethylaniline, 120 lb	.45	.42	.40
1918	.45	.38	.41	bbls . . . . .	.11	.21	.21
	.21	.21	.21	Toluenesulfonamide, 175 lb	.19	.19	.19
	.19	.19	.19	bbls . . . . .	.25	.25	.25
	.12	.25	.25	Toluenesulfonchloride, 410 lb	.02½	.03	.02½
	.02½	.02½	.02½	bbls wks. . . . .	.18	.16	.17
1918	.18	.16	.17	bbls	1.35	1.35	1.35
1918	1.35	1.28	1.35	Toluidine, 350 lb bbls wk.	9.00	10.10	9.00
45.00	9.00	8.50	8.75	Paris Green, Arsenic Basis	3.00	3.15	3.00
3.00	3.00	3.00	3.00	100 lb kegs.	2.00	3.50	3.50
2.00	3.50	3.50	3.50	250 lb kegs.	4.00	4.15	4.00
	4.00	3.85	3.96	Persian Berry Ext., bbls	4.00	5.35	5.00
	4.00	5.35	5.00	Petrolatum, Green, 300 lb bbl.	4.00	5.75	5.00
	4.00	5.75	5.60	Phenol, 250-100 lb drums.	5.75	6.25	5.75
	5.75	6.25	6.00	Phenyl - Alpha - Naphthylamine,	4.50	5.00	5.00
	4.50	5.00	5.12½	100 lb kegs.			
	.35	.35	.35	Phosphate Acid, 16% blk wks. ton			
	.45	.65	.62	Phosphate Rock, f.o.b. mines			
	.35	.32	.32	Florida Pebble, 68% basis. ton			
	.46	.46	.46	70% basis.			
	.35	.35	.35	72% basis.			
				75-74% basis.			
				75% basis.			
				77-76% basis.			
				Tennessee, 72% basis.			
	.18	.18	.18	Phosphorous Oxide 175 lb			
				cyl.			
				Red, 110 lb cases.			
				Yellow, 110 lb cases wks.			
				Sesquisulfide, 100 lb cs.			
				Trichloride, cylinders.			
				Phthalic Anhydride, 100 lb bbls			
				wks.			



Pure **PTHALIC ANHYDRIDE**

FOR over ten years, buyers have been accustomed to using PHTHALIC ANHYDRIDE of the highest purity by specifying "SELDEN BRAND".

Not only does "SELDEN BRAND" assure them of a product of highest purity, but it gives them PHTHALIC ANHYDRIDE in the form of natural long needle crystals --- the form which dissolves and melts most readily.

For USE In

ANTHRANILIC ACID
ANTHRAQUINONE
BENZOIC ACID
BROMOFLUORESCEIC ACID
DIAMYL PHTHALATE
DIBUTYL PHTHALATE
DIETHYL PHTHALATE
EOSINE
ERYTHROSINE
FLUORESCEIN
"GLYPTAL" Synthetic Resin
PHENOLPHTHALEIN
PHTHALIMIDE
TETRACHLOR PHTHALIC ACID

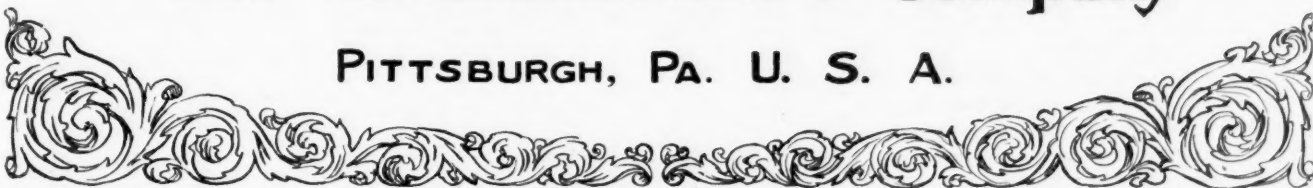
SELDEN BRAND PHTHALIC ANHYDRIDE reaches you in a new slack paper-lined barrel, containing 150 lbs. net weight, and the package is so constructed that it can be used for re-shipment.

Our service on PHTHALIC ANHYDRIDE is unexcelled and we are in position to make prompt shipments.

Let us quote on your requirements.

The SELDEN Company

PITTSBURGH, PA. U. S. A.



Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

have a strengthening effect upon the market. Total deliveries during the past year show an increase of 765,000 tons at 2,518,000 tons against 1,753,000 tons, 2,092,000 tons, 2,340,000 tons and 2,192,000 tons respectively for the four previous years and 2,629,000 tons for the year ending June 30th, 1914, and whilst creating a record consumption since the War, only falls 111,000 tons below the highest pre-war figure. The consumption in Europe at 1,138,000 tons registered an increase of 375,000 tons, Egypt at 177,000 tons, an increase of 22,500 tons, the United States at 995,000 tons an increase of 321,500 tons and other countries at 208,000 tons on increase of 46,000 tons.

Sodium Nitrite — Domestic manufacturers express themselves as quite satisfied with the volume of business which is being consummated. The market is in much the same condition as when last reported both as to demand and price.

Solvent Naphtha — At the scheduled price of 35c gal. an average amount of business for the season is passing. Dealers seem to have little trouble in getting business at the figure named above. No change in the situation is anticipated.

Starch — The cornstarch industry has developed very rapidly in recent years, production having increased from 311, 100,000 pounds in 1904 to a high record of 933,242,065 pounds in 1927, according to the Department of Commerce.

Of the amount produced in 1927, 242, 870,000 pounds were exported. Although this is not a record year in export trade, it is well above the average, the five-year average for the year 1922-1926, inclusive, being 225,819,000 pounds.

The starch industry of the United States ground 85,653,509 bushels of corn in 1927; this is approximately 20 per cent. of all the so-called "cash" corn; that is, corn that actually comes into the market. It is well known that the great bulk of our corn crop, averaging about 2,850,000,000 bushels, never leaves the farm, only about 450,000,000 bushels finding its way into commercial channels.

The production of cornstarch in the United States from 1904 to 1927, inclusive, in millions of pounds, follows: 1904, 311.1; 1909, 639.0; 1914, 574.2; 1919, 728.0; 1921, 860.2; 1923, 839.4; 1925, 854.1; 1927, 933.2 (unofficial figure).

These figures include only commercial cornstarch sold as such, either in bulk or in packages, and do not take into consideration starch that is used in the manufacture of glucose or corn sirup.

1914 July	High	1 9 2 7 Low	Aver.		Current Market	High	1928 Low
.....	40.00	37.00	38.50	Pigments Metallic, Red or brown bags, bbls, Pa. wks. ton	37.00	45.00	45.00 37.00
1918	.63	.63	.63	Pine Oil, 55 gal drums or bbls			
.....	8.00	8.00	8.00	Destructive dist. lb.	.63	.64	.64 .63
.34	.70	.66	.69	Prime bbls. bbl.	8.00	10.60	10.60 8.00
37.50	40.00	40.00	40.00	Steam dist. bbls. gal.	.....	.70	.70 .70
1.50	3.30	3.30	3.30	Pitch Hardwood, ton	40.00	45.00	45.00 40.00
				wks. ton			
				Plaster Paris, tech, 250 lb bbls	.....	3.30	3.30 3.30
				..... bbl.			
Potash							
.04½	.07½	.07½	.07½	Potash, Caustic, wks. lb.	.....	.07½	.07½ .07½
.....	.07½	.07½	.07½	Imported casks c-1. lb.	.....	.07½	.07½ .07½
8.36	9.00	9.00	9.00	Potash Salts, Rough Kainit			
.....	9.50	9.50	9.50	12.4% basis bulk. ton	.....	9.00	9.00 9.00
				14% basis. ton	.....	9.50	9.50 9.50
13.58	12.40	12.40	12.40	Manure Salts. ton			
.....	18.75	18.75	18.75	20% basis bulk. ton	.....	12.40	12.40 12.40
				30% basis bulk. ton	.....	18.75	18.75 18.75
39.07	36.40	36.40	36.40	Potassium Murate, 80% basis			
				bags. ton	.....	36.40	36.40 36.40
25.04	27.00	27.00	27.00	Pot. & Mag. Sulfate, 40% basis			
				bags. ton	.....	27.00	27.00 27.00
47.57	47.30	47.30	47.30	Potassium Sulfate, 90% basis			
				bags. ton	.....	47.30	47.30 47.30
.08	.09	.09	.09	Potassium Bicarbonate, USP, 320			
				lb bbls. lb.	.09	.09½	.09½ .09
.06½	.08½	.08	.08½	Bichromate Crystals, 725 lb			
.....	.12	.11	.11	casks. lb.	.09	.09½	.09½ .08½
.....	.16	.16	.16	Powd., 725 lb cks wks. lb.	.12½	.13	.12½ .12
.....	.30	.30	.30	Binoxiate, 300 lb bbls. lb.	.16	.17	.17 .16
.03½	.05½	.05½	.05½	Bisulfate, 100 lb kegs. lb.	.....	.30	.30 .30
.07½	.08½	.08½	.08½	Carbonate, 80-85% calc. 800			
				lb casks. lb.	.05½	.05½	.05½ .05½
.....	.08½	.08½	.08½	Chlorate crystals, powder 112			
.....	.05½	.05½	.05½	lb keg wks. lb.	.06½	.09	.09 .06½
.....	.27	.27	.27	Potassium Chlorate, Imp 112 lb			
.20	.55	.55	.55	kegs NY. lb.	.07½	.08½	.08½ .07½
.13	.11½	.11½	.11½	Chloride, crys bbls. lb.	.05½	.05½	.05½ .05½
.14	.16	.16	.16	Chromate, kegs. lb.	.27	.28	.28 .27
.....	.11	.11	.11	Cyanide, 110 lb. cases. lb.	.55	.57½	.57½ .55
.09½	.15½	.14½	.14½	Metabisulfite, 300 lb. bbl. lb.	.11½	.12	.12 .11½
.21	.39	.37	.38	Oxalate, Neut. 225 lb. bbls. lb.	.16	.17	.17 .16
.12½	.18	.18	.18	Perchlorate, casks wks. lb.	.11	.12	.12 .11
.....	.51	.51	.51	Permanganate, USP, crys 500			
.....	.25	.25	.25	& 100 lb drs wks. lb.	.15	.15½	.15½ .15
.04½	.04½	.04½	.04½	Prussiate, red, 112 lb keg. lb.	.37	.38	.38 .37
.01½	.02½	.02½	.02½	Yellow, 500 lb casks. lb.	.18	.18½	.18½ .18
2.65	3.75	3.75	3.75	Tartrate Neut, 100 lb keg. lb.	.....	.51	.51 .51
4.25	5.50	5.50	5.50	Titanium Oxalate, 200 lb bbls			
.....	3.00	1.50	.94	..... lb.	.....	.25	.25 .25
.10½	.13	.12	.12½	Pumice Stone, lump bags. lb.	.04	.05	.05 .04
.02½	.03	.03	.03	250 lb bbls. lb.	.04½	.06	.06 .04½
.....	.03½	.03½	.03½	Powdered, 350 lb bags. lb.	.02½	.03	.03 .02½
.....	.04	.04	.04	Putty, commercial, tubs. lb.	.....	.03½	.03½ .03½
.04½	.05	.04½	.04½	Linseed Oil, kegs. 100 lb.	.....	.05½	.05½ .05½
.....	.05	.05	.05	Pyridine, 50 gal drums. gal.	.....	1.50	1.50 1.50
.01½	.06½	.06½	.06½	Pyrites, Spanish cif Atlantic			
.02½	.10	.10	.10	ports bulk. unit	.13	.13½	.13½ .13
22.00	14.00	14.00	14.00	Quebracho, 35% liquid tks. lb.	.03	.03½	.03½ .03
.....	34.00	34.00	34.00	450 lb bbls c-1. lb.	.03½	.04	.04 .03½
1918	.45	.45	.45	35% Bleaching, 450 lb bbl. lb.	.04	.05	.05 .04
.03	.18	.18	.18	Solid, 63%, 100 lb bales cif. lb.	.05½	.05½	.05½ .05
1918	1.25	1.25	1.25	Clarified, 64%, bales. lb.	.....	.05½	.05½ .05
.27	.67	.57	.59	Quercitron, 51 deg liquid 450 lb			
.38	.72	.62	.64	bbls. lb.	.05½	.06	.06 .05½
4.37½	13.00	8.50	10.08½	Solid, 100 lb boxes. lb.	.10	.13	.13 .10
4.42½	13.00	8.50	10.17	Bark, Rough. ton	.....	14.00	14.00 14.00
4.42½	13.15	8.50	10.23	Ground. ton	34.00	35.00	35.00 34.00
4.47½	13.20	8.50	10.49	R Salt, 250 lb bbls wks. lb.	.45	.46	.46 .45
4.47½	13.25	8.50	10.58½	Red Sanders Wood, grd bbls. lb.	.....	1.25	1.35 1.25
4.47½	13.30	8.50	10.65	Resorcinol Tech, cans. lb.	.....	
4.55	13.35	8.55	10.79½	Rosin Oil, 50 gal bbls, first run			
4.49½	14.80	8.65	11.05	..... gal.	.....	.57	.57 .57
5.47½	15.00	8.80	11.15½	Second run. gal.	.....	.62	.62 .62
6.12½	15.85	9.15	11.62	Rosins, 600 lb bbls 280 lb. unit			
6.67½	16.60	10.50	12.58	B. ....	.....	9.55	9.75 8.20
6.92½	18.55	12.00	14.34	D. ....	.....	9.60	9.80 8.25
.....	24.00	24.00	24.00	E. ....	.....	9.65	9.95 8.60
.05½	.09	.09	.09	F. ....	.....	9.70	10.10 8.65
.02½	.02	.02	.02	G. ....	.....	9.70	10.10 8.75
.02½	.04½	.04½	.04½	H. ....	.....	9.72½	10.10 8.75
.60	.90	.90	.90	I. ....	.....	9.75	10.15 8.80
11.00	19.00	19.00	19.00	K. ....	.....	9.80	10.15 8.85
8.00	15.00	15.00	15.00	M. ....	.....	9.80	10.30 8.85
.04½	.06½	.06½	.06½	N. ....	.....	9.95	11.00 9.60
.....	.01½	.01½	.01½	WG. ....	.....	10.95	11.65 10.25
.18½	.66	.47	.57	WW. ....	.....	11.30	12.65 10.70
.15	.57	.41	.48	Rotten Stone, bags mines. ton	24.00	30.00	30.00 24.00
.14½	.65	.40	.52½	Lump, imported, bbls. lb.	.....	.07	.08 .07
.15½	.37	.57	.49	Selected bbls. lb.	.....	.09	.12 .09
1918	.50	.50	.50	Powdered, bbls. lb.	.....	.02	.05 .02
				Sago Flour, 150 lb bags. lb.	.04½	.05	.05 .04½
				Sal Soda, bbls wks. 100 lb.	.....	19.00	20.00 19.00
				Salt Cake, 94-96% c-1 wks. ton	15.00	17.00	17.00 15.00
				White, 87% wks. ton	.....	
				Saltpetre, double reld granular			
				450-500 lb bbls. lb.	.06½	.06½	.06½ .06½
				Satin, White, 500 lb bbls. lb.	.....	.01	.01 .01
				Shellac Bone dry bbls. lb.	.....	.62	.62 .49
				Garnet, bags. lb.	.46	.47	.55 .46
				Superfine, bags. lb.	.49	.50	.58 .47
				T. N. bags. lb.	.46	.47	.55 .42
				Schaeffer's Salt, kegs. lb.	.53	.57	.57 .53

Know Paraldehyde

(CH₃CHO)₃

Packing

110 Gallon Drums
800 lbs. net
55 Gallon Drums
400 lbs. net
10 Gallon Drums
80 lbs. net
5 Gallon Drums
40 lbs. net

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■ Acetaldehyde
Acetaldol
Crotonaldehyde
Paraldehyde
Paraldol

PARALDEHYDE is a colorless liquid with a pleasant odor, miscible with all the ordinary solvents except water in all proportions. Boiling point 124°C.

Paraldehyde is stable towards alkalies and can be easily converted into acetaldehyde by mild heating in the presence of a small amount of acid. This property, together with its low vapor pressure, sometimes makes the use of Paraldehyde preferable to acetaldehyde.

NIACET Paraldehyde is used in the production of dye stuffs, rubber accelerators, synthetic resins and for medicinal purposes.

Samples and specifications of NIACET products will be sent on request.

NIACET CHEMICALS CORPORATION
◆ **Niagara Falls** ◆
NEW YORK

Prices Current and Comment

Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1917 71.7c - April 1928 67.8c

The year 1928 gives every promise of being a record breaker in exports of corn starch, exports for the first five months of the year having amounted to 108,643,000 pounds as compared with 77,548,000 pounds for the same period in 1927—an increase of 40.1 per cent. Corn starch was exported to some 70 different countries in 1927, going to every part of the globe.

The United Kingdom was, by far, our largest customer, taking 162,447,000 pounds, or about 67 per cent. of total exports. Other large customers included the Netherlands, 14,340,000 pounds; British India, 11,527,000 pounds; Belgium, 8,669,000 pounds; Japan, 8,252,000 pounds; Cuba, 5,971,000 pounds; Denmark, 5,818,000 pounds.

Turpentine — Has declined during the month due to seasonal falling off of buying interest. Spirits are not at 53c @ 58½c gal. and wood steam distilled at 51c gal.

Wattle Bark — Supplies are again scarcer, and the market has advanced to \$58.75 ton.

Zinc Ammonium Chloride — Is once again the subject of heavy competition among the importers and domestic manufacturers. The latter admit that a fair portion of business is going into importers hands and quotations from the latter group are heard as low at \$5.25 100 lbs. f. o. b. New York. Zinc ammonium chloride continues in competition with gray sal ammoniac for the galvanizers' favor but there has not been much change in this situation over the past month. Domestic manufacturers name their openly quoted price at \$5.50 100 lbs., though it seems that this level would be shaded on firm business.

OILS AND FATS

Castor Oil — Producers announced the first change in price of the year during the past month. This was a decline, so that No. 1 is now quoted at 13½c @ 14c lb.; No. 3 at 13c @ 13½c lb. and blown at 14½c @ 15½c lb.

Chinawood Oil — Price on tanks at the Coast has advanced steadily during the past month and is now at 14c lb., 1¼c lb. higher than when last quoted. This recovery was more or less expected, as last month's price marked the lowest point of the year. Barrels, spot, on the other hand, declined somewhat soon after

1914 July	High	1927 Low	Aver.		Current Market	High	1928 Low	
.....	6.00	6.00	6.00	Silica, Crude, bulk mines..... ton	8.00	11.00	11.00	8.00
.....	15.00	15.00	15.00	Refined, floated bags..... ton	22.00	30.00	30.00	22.00
.....	32.00	32.00	32.00	Air floated bags..... ton	.....	.....	.....	.....
.....	55.00	55.00	55.00	Extra floated bags..... ton	32.00	40.00	40.00	32.00
10.00	15.00	15.00	15.00	Soapstone, Powdered, bags f.o.b. mines..... ton	15.00	22.00	22.00	15.00
Soda								
.....	1.32½	1.32½	1.32½	Soda Ash, 58% dense, bags c-1 wks..... 100 lb.	1.40	1.40	1.40	1.40
.....	2.14	2.04	2.12	58% light, bags del NY..... 100 lb.	2.04	2.29	2.29	2.04
.....	1.32½	1.32½	1.32½	Contract, bags c-1 wks..... 100 lb.	1.32½	1.32½	1.32½	1.32½
2.50	4.16	4.06	4.14½	Soda Caustic, 76% grnd & flake drums del NY..... 100 lb.	4.16	4.21	4.21	4.16
.....	3.76	3.66	3.74½	76% solid drs del NY..... 100 lb.	3.76	3.91	3.91	3.76
.....	3.00	3.00	3.00	Contract, c-1 wks..... 100 lb.	3.00	3.00	3.00	3.00
.....	Sodium Acetate, crystals, 450 lb bbls wks..... lb.	.....	.....	.....	.....
.....	Arsenate, drums..... lb.	.....	.....	.....	.....
.....	Arsenite, drums..... gal.	.....	.....	.....	.....
1.00	2.41	2.41	2.41	Bicarb., 400 lb bbl NY..... 100 lb.	2.41	2.41	2.41	2.41
.....	Bichromate, 500 lb cks wks..... lb.	.....	.....	.....	.....
.....	Bisulfite, 500 lb bbl wks..... lb.	.....	.....	.....	.....
.....	Carb. 350 lb bbls NY..... 100 lb.	.....	.....	.....	.....
.....	Chlorate, 112 lb kegs wks..... lb.	.....	.....	.....	.....
.....	Chloride, technical..... ton	12.00	13.00	13.00	12.00
.....	Cyanide, 96-98%, 100 & 250 lb drums wks..... lb.	.....	.....	.....	.....
.....	Fluoride, 300 lb bbls wks..... lb.	.....	.....	.....	.....
.....	Hydroxysulfite, 200 lb bbls f.o.b. wks..... lb.	.....	.....	.....	.....
.....	Hypochloride solution, 100 lb obys..... lb.	.....	.....	.....	.....
.....	Hyposulfite, tech, pea crys 375 lb bbls wks..... 100 lb.	.....	.....	.....	.....
1.40	2.65	2.65	2.65	Technical, regular crystals 375 lb bbls wks..... 100 lb.	2.65	3.05	3.05	2.65
.....	Metanilate, 150 lb bbls..... lb.	.....	.....	.....	.....
.....	Monohydrate, bbls..... lb.	.....	.....	.....	.....
.....	Naphthionate, 300 lb bbl..... lb.	.....	.....	.....	.....
.....	Nitrate, 92%, crude, 200 lb bags c-1 NY..... 100 lb.	.....	.....	.....	.....
.....	Nitrite, 500 lb bbls spot..... lb.	.....	.....	.....	.....
.....	Orthochlorotoluene, sulfonate, 175 lb bbls wks..... lb.	.....	.....	.....	.....
.....	Oxalate Neut, 100 lb kegs..... lb.	.....	.....	.....	.....
.....	Paratoluene, tri-sodium, tech, 100 lb bbls c-1..... 100 lb.	.....	.....	.....	.....
.....	Sulfonate, 175 lb bbls..... lb.	.....	.....	.....	.....
.....	Perborate, 275 lb bbls..... lb.	.....	.....	.....	.....
.....	Phosphate, di-sodium, tech, 550 lb bbls..... 100 lb.	.....	.....	.....	.....
.....	Picramate, 100 lb kegs..... lb.	.....	.....	.....	.....
.....	Prussiate, Yellow, 350 lb bbl wks..... lb.	.....	.....	.....	.....
.....	Pyrophosphate, 100 lb keg..... lb.	.....	.....	.....	.....
.....	Silicate, 40 deg clear 55 gal drs wks..... 100 lb.	.....	.....	.....	.....
.....	40 deg turbid 55 gal drs wks..... 100 lb.	.....	.....	.....	.....
.....	Silicofluoride, 450 lb bbls NY lb.	.....	.....	.....	.....
.....	Stannate, 100 lb drums..... lb.	.....	.....	.....	.....
.....	Stearate, bbls..... lb.	.....	.....	.....	.....
.....	Sulfanilate, 400 lb bbls..... lb.	.....	.....	.....	.....
.....	Sulfate Anhyd., 550 lb bbls c-1 wks..... lb.	.....	.....	.....	.....
.....	Sulfide, 30% crystals, 440 lb bbls wks..... lb.	.....	.....	.....	.....
.....	62% solid, 650 lb drums 1c-1 wks..... lb.	.....	.....	.....	.....
.....	Sulfite, crystals, 400 lb bbls wks..... lb.	.....	.....	.....	.....
.....	Sulfocyanide, bbls..... lb.	.....	.....	.....	.....
.....	Tungstate, tech, crystals, kegs lb.	.....	.....	.....	.....
.....	Solvent Naphtha, 110 gal drs wks..... gal.	.....	.....	.....	.....
.....	Spruce, 25% liquid, bbls..... lb.	.....	.....	.....	.....
.....	25% liquid, tanks wks..... lb.	.....	.....	.....	.....
.....	50% powd., 100 lb bag wks..... lb.	.....	.....	.....	.....
.....	Starch, powd., 140 lb bags lb.	.....	.....	.....	.....
.....	Pearl, 140 lb bags..... 100 lb.	.....	.....	.....	.....
.....	Potato, 200 lb bags..... lb.	.....	.....	.....	.....
.....	Imported bags..... lb.	.....	.....	.....	.....
.....	Soluble..... lb.	.....	.....	.....	.....
.....	Rice, 200 lb bbls..... lb.	.....	.....	.....	.....
.....	Wheat, thick bags..... lb.	.....	.....	.....	.....
.....	Thin bags..... lb.	.....	.....	.....	.....
.....	Strontium carbonate, 600 lb bbls wks..... lb.	.....	.....	.....	.....
.....	Nitrate, 600 lb bbls NY..... lb.	.....	.....	.....	.....
Sulfur								
.....	Sulfur Brimstone, broken rock, 250 lb bag c-1..... 100 lb.	.....	.....	.....	.....
.....	Crude, f.o.b. mines..... ton	18.00	19.00	19.00	18.00
.....	Flour for dusting 99½%, 100 lb bags c-1 NY..... 100 lb.	.....	.....	.....	.....
.....	Heavy bags c-1..... 100 lb.
.....	Flowers, 100%, 155 lb bbls c-1 NY..... 100 lb.
.....	Roll, bbls 1c-1 NY..... 100 lb.

PLASTICIZERS

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Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

last quoted, but have since recovered and are now quoted at 15½¢ @ 16c lb., ½¢ lb. higher than when last quoted.

All exporters of wood oil to the United States at Hankow and 90 per cent. of the other wood oil dealers located there have formed a wood oil exporters association, according to the Department of Commerce. Prospects are that all exporters of wood oil will soon join the association. The Department also announces that declared exports of wood oil from Shanghai to the United States for the first six months of this year totaled 1,431,000 pounds, valued at \$182,000. For the corresponding period of last year the amount was 4,183,775 pounds valued at \$587,161. This high quantity in the previous year was due mainly to shipping difficulties encountered at that time in forwarding supplies of oil to Hankow, and the increased exports from Shanghai consisted of shipments formerly exported from Hankow.

Coconut Oil — Has maintained a steady position with but few changes since last reported. The barrel price on both Ceylon and Manila at New York has advanced slightly. The former is now quoted at 9½¢ lb. and the latter at 9¾¢ lb. Tanks of Manila at the Coast have declined ¼¢ lb. since last quoted due to some accumulation of stocks at that point. Now quoted at 7¾¢ @ 8c lb.

Corn Oil — Has finally followed the lead of the grain market and eased off slightly although still maintaining a rather strong position. Crude oil in barrels is quoted at 10c @ 11c lb., while the tank price is at 8¾¢ @ 9c lb. at the mills. Refined oil is also lower being quoted at 12c lb. in barrels and 11c lb. in tanks at New York. In addition to easier conditions in the grain market, these declines in price are also traceable to easier conditions in cottonseed oil.

Cottonseed Oil — PSY has declined 1c lb. during the past month and is quoted at 9.45c lb. Futures have declined proportionately and are quoted at 9.60c lb. Crude oil remains nominal. The lower position of this oil is quite natural at this time of the year as pressings fall off until the early fall and the new crop.

Greases — Both brown and yellow have declined during the month and are now quoted at 7c @ 7½¢ lb. and 7¼¢ @ 7½¢ lb. respectively. White has remained unchanged.

Linseed Oil — Quotations are now at 10.3c lb. in five-barrel lots; 9.9c lb. bar-

1914 July	High	1927 Low	Aver.	Current Market	1928 High	Low
.....	.05	.05	.05	Sulfur Chloride, red, 700 lb drs wks. ....	.05	.05
.....	.03½	.03½	.03½	Yellow, 700 lb drs wks. ....	.03½	.04
.....	.08	.08	.08	Sulfur Dioxide, 150 lb cyl. ....	.08	.08
.....	.17	.17	.17	Extra, dry, 100 lb cyl. ....	.17	.19
.....	.65	.65	.65	Sulfuryl Chloride, 600 lb dr. ....	.10	.65
.....	.11	.11	.11	Stainless, 600 lb bbls. ....	.11	.11
.....	.05	.05	.05	Extract, 450 lb bbls. ....	.05½	.06
.....	130.00	130.00	130.00	Sicily Leaves, 100 lb bg.	130.00	130.00
62.00	80.00	72.00	73.75	Ground shipment.	72.00	72.00
40.00	55.00	55.00	55.00	Virginia, 150 lb bags.	55.00	60.00
.....	12.00	12.00	12.00	Tale, Crude, 100 lb bgs NY.	12.00	15.00
15.00	16.00	16.00	16.00	Refined, 100 lb bgs NY.	16.00	18.00
15.00	30.00	30.00	30.00	French, 220 lb bags NY.	30.00	35.00
.....	38.00	38.00	38.00	Refined, white, bags.	38.00	45.00
35.00	40.00	40.00	40.00	Italian, 220 lb bags NY.	40.00	50.00
.....	50.00	50.00	50.00	Refined, white, bags.	50.00	55.00
3.50	4.85	4.00	4.41	Tankage Ground NY.	4.65	5.10
3.10	5.25	3.75	4.29	High grade f.o.b. Chicago.	4.25	4.25
.....	5.25	4.00	4.38½	South American oil.	5.00	105.00
.02	.04½	.04½	.04½	Tapioca Flour, high grade bgs. ....	.04½	.05
.01½	.03½	.03½	.03½	Medium grade, bags. ....	.03½	.04
.....	.26	.26	.26	Tar Acid Oil, 15% drums. ....	.26	.27
.....	.29	.29	.29	25% drums. ....	.29	.30
.....	.07	.07	.07	Coke Oven, tanks wks. ....	.07	.08
6.50	16.00	13.50	14.87½	Kiln Burnt, bbl.	13.50	13.50
6.76	18.50	13.50	15.38½	Retort, bbls.	13.50	15.00
.....	.75	1.15	1.15	Terra Alba Amer. No. 1, bags or bbls mills.	1.15	1.75
.60	1.50	1.50	1.50	No. 2 bags or bbls.	1.50	2.00
.80	2.00	2.00	2.00	Imported bags. ....	.02	.02½
.....	.20	.20	.20	Tetralene, 50 gal drs wks. ....	.20	.20
.....	.22	.22	.22	Thiocarbamid, 170 lb bbl. ....	.22	.24
.11½	.20½	.17½	.19	Tin Bichloride, 50% soln, 100 lb bbls wks. ....	.15½	.17½
.23	.48	.41½	.45	Crystals, 500 lb bbls wks. ....	.39½	.41½
.....	.71½	.58	.65	Metal Straits NY. ....	.51½	.58
.36	.75	.70	.71	Oxide, 300 lb bbls wks. ....	.56	.75
.....	.48	.35½	.39	Tetrachloride, 100 lb drs wks.....	.33	.35½
.....	.40	.40	.40	Titanium Oxide, 200 lb bbl. ....	.40	.40
.....	.13½	.13½	.13½	Pigment, bbls wks. ....	.13½	.14
1918	.40	.40	.40	Toluene, 110 gal drs wks. ....	.40	.40
.....	.35	.35	.35	8000 gal tank cars wks. ....	.35	.35
1918	.90	.90	.90	Toluidine, 350 lb bbls. ....	.90	.94
1918	.31	.31	.31	Mixed, 900 lb drs wks. ....	.31	.32
.....	.85	.85	.85	Toner Lithol, red, bbls. ....	.85	.90
.....	.75	.75	.75	Para, red, bbls. ....	.70	.75
1918	1.75	1.75	1.75	Toluidine.	1.70	1.75
.....	3.60	3.60	3.60	Triacetin, 50 gal drs wks.	3.60	3.90
.....	.36	.36	.36	Triacetyl Phosphate, drs. ....	.36	.50
.....	.70	.69	.69	Triphenylguanidine. ....	.69	.73
.....	.70	.70	.70	Phosphate, drums. ....	.70	.75
.....	2.50	2.50	2.50	Tripoli, 500 lb bbls.	2.50	3.00
.49	.86	.53½	.65	Turpentine Spirits, bbls. ....	.53	.58½
.34	.76	.46	.55	Wood Steam dist. bbls. ....	.51	.59
.....	.18	.18	.18	Urea, pure, 112 lb cases. ....	.18	.20
.....	70.00	66.00	61.52	Valonia Beard, 42%, tannin bags.	Nom.	76.00
.....	49.50	39.00	43.96	Cups, 30-31% tannin.	Nom.	55.00
.....	68.00	43.00	48.52	Mixture, bark, bags.	Nom.	64.00
.55	1.95	1.55	1.94½	Vermilion, English, kegs.	1.85	1.90
.....	59.00	49.50	53.71	Wattle Bark, bags.	58.75	76.00
.....	.05½	.05½	.05½	Extract 55%, double bags ex- dock. ....	.06½	.06½
.45	1.25	1.25	1.25	Whiting, 200 lb bags, c-1 wks	1.25	1.25
.....	13.00	13.00	13.00	Alba, bags c-1 NY.	13.00	13.00
.55	1.35	1.35	1.35	Gilders, bags c-1 NY.	1.35	1.35
.....	.08½	.08½	.08½	Zinc Ammonium Chloride powd., 400 lb bbls.	5.25	5.75
.....	.09½	.09½	.09½	Carbonate Tech, bbls NY. ....	.09½	.10
.....	.04½	.06	.06	Chloride Fused, 600 lb drs. wks. ....	.06	.06
.....	.04½	.06½	.06½	Gran., 500 lb bbls wks. ....	.06½	.06½
.....	3.00	3.00	3.00	Soln 50%, tanks wks.	3.00	3.00
.....	.40	.40	.40	Cyanide, 100 lb drums. ....	.40	.41
.....	.05½	.09	.09	Dust, 500 lb bbls c-1 wks. ....	.09	.09
.....	7.35	6.40	6.66	Metal, high grade slabs c-1 NY.	6.45	6.40
.05½	.07½	.07	.07½	Oxide, American bags wks. ....	.07½	.07½
.06½	.10½	.10	.10½	French, 300 lb bbls wks. ....	.10½	.12
.02½	.03	.03	.03	Sulfate, 400 bbl wks. ....	.03	.03
.....	.29	.29	.29	Sulfide, 500 lb bbls. ....	.30	.32
.....	.38	.32	.37	Sulfocarbonate, 100 lb keg. ....	.29	.30
.....	.36	.30	.35	Xylene, 10 deg tanks wks. ....	.30	.32
1918	.35	.35	.35	Commercial, tanks wks. ....	.30	.32
.....	.02½	.02½	.02½	Xylidine, crude. ....	.02½	.38
.....	.45	.45	.45	Zirconium Oxide, Nat. kegs. ....	.03	.03
.....	.08½	.08	.08	Pure kegs. ....	.45	.50
.....	.08	.08	.08	Semi-refined kegs. ....	.08	.10
.....	.08	.14	.13	Castor, No. 1, 400 lb bbls. ....	.13½	.14
.....	.08	.14	.12½	No. 3, 400 lb bbls. ....	.13	.13
.....	.18	.17	.18	Blown, 400 lb bbls. ....	.14½	.15
.06½	.31	.13½	.19	China Wood, bbls spot NY. ....	.15	.16
.05½	.18	.12½	.16½	Tanks, spot NY.	Nom.	Nom.
1918	.12	.12	.12	Coast tanks, July. ....	.14	.14½
.09½	.09½	.09	.09	Cocoonut, edible, bbls NY. ....	.10½	.11½
.08½	.08½	.08	.08½	Ceylon, 375 lb bbls NY.9½	.10
.10½	.10½	.09½	.10	8000 gal tanks NY.8½	.09
.....	.10	.10	.10	Cochin, 375 lb bbls NY.10	.10

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Prices Current and Comment

Standard Purchasing Power of the Dollar: July 1914 \$1.00 - Jan. 1927 68.7c - July 1927 71.7c - April 1928 67.8c

rels, carload, spot for August-September and 9.10c lb. for October-December; and 9.1c lb. in tanks, August-September and 9.2c lb. for October-December. The Census Bureau, Department of Commerce, announces production of 179,352,207 pounds of linseed oil for quarter ended June 30, 1928 which compares with 167,232,121 pounds of oil produced during corresponding quarter of last year.

Menhaden Oil — With the fishing season well under way, crude oil is now quoted at 42½c lb. Reports from the banks thus far have been unfavorable indicating a considerably reduced production for the coming season.

Oleo Oil — Both No. 1 and No. 3 have declined during the past month. The former is quoted at 13½c lb., marking a decline of ½c lb.; and the latter is quoted at 11c lb., a decline of ¾c lb. since last quoted. No. 2, after advancing to 12½c lb. near the end of last month, has returned to the same position as last quoted, 12c lb.

Olive Oil — But little activity has taken place in this market during the past month. Foots alone has changed in price, now being quoted at 9¾c @ 10c lb., an advance of ½c lb. during the month.

Palm Kernel Oil — Some scarcity of replacements has led to an advance of ¼c lb. during the past month, so that quotations are now at 9 @ 9¼c lb.

Palm Oil — Offerings have been scarce from the primary markets. This feature, combined with a present scarcity of spot stocks, has led to advances in both grades since last reported. Lagos has advanced ¼c @ ¼c lb. during the month and is now quoted at 8c @ 8¼c lb. Niger has advanced ¼c lb. and is now quoted at 7½c @ 7¾c lb.

Rapeseed Oil — Blown oil has been very firm although unchanged in price during the past month. This is attributed to a scarcity of supply. Japanese oil is now available again and is quoted at 90c lb. while English is at 92c lb.

Soy Bean Oil — Supplies of crude oil are again available at the Coast and quotations are at 9¾c @ 9½c lb. in tanks. All grades have declined in New York. Crude oil in barrels is quoted at 12¼c @ 12½c lb.; in tanks at 10¼ lb. Refined oil is also ½c lb. lower, being quoted at 13¼c @ 13½c lb.

Stearine Oleo — Has advanced steadily, week by week, during the past month. Demand has been good and quotations are now ¾c lb. higher than when last quoted, being at 10¾c @ 10½c lb.

1914 July	High	1 9 2 7 Low	Aver.		Current Market	1928 High	Low
.05½	.10	.08½	.09½	Tanks NY.....lb.	.09½	.09½	.09½
.09½	.09½	.08½	.09½	Manila, bbls NY.....lb.	.09½	.10	.09½
.08½	.08½	.08½	.08½	Tanks NY.....lb.	.08½	.08½	.08½
.08½	.08½	.08½	.08½	Tanks, Pacific Coast.....lb.	.07½	.08½	.07½
.36½	.66	.63	.64½	Cod, Newfoundland, 50 gal bbls	.68	.69	.63
.36½	.59	.59	.59	Tanks NY.....lb.	.62	.63	.62
				Cod Liver see Chemicals.....			
1918	.06	.06	.06	Copra, bags.....lb.	.05½	.06½	.05½
.06½	.11	.07	.10	Corn, crude, bbls NY.....lb.	.10	.11	.10
.06½	.09½	.07	.08½	Tanks, mills.....lb.	.08½	.09	.08½
1916	.14	.10½	.12	Refined, 375 lb bbls NY.....lb.	.12	.12½	.12
1916	.12	.11	.11	Tanks.....lb.	.11	.11½	.11
.06	.09½	.06½	.08	Cottonseed, crude, mill.....lb.	Nom.	.09½	.07½
.07½	.11½	.08 1/5	.10	PSY, 100 lb bbls spot.....lb.	9.45	10.65	.09½
				June—Au5.....lb.	9.60	10.75	.09½
				Degras, American, 50 gal bbls			
.02½	.04½	.04½	.04½	NY.....lb.	.04½	.05	.04½
.03½	.04½	do	do	English, brown, bbls NY.....lb.	.05½	.05½	.04½
.03½	.05½	.05½	.05½	Light, bbls NY.....lb.	.05½	.05½	.05½
.04½	.07½	.06	.06½	Greases, Brown.....lb.	.07	.07½	.07
.05½	.08	.06½	.07½	Yellow.....lb.	.07½	.08	.07
.06½	.10½	.08½	.09½	White, choice bbls NY.....lb.	.09½	.10½	.09½
				Herring, Coast, Tanks.....gal.	40	.42½	.40
.009	.09½	.09	.09½	Horse, bbls.....lb.	.09½	Nom.	.09½
.13	.16½	.14½	.15½	Lard Oil, edible, prime.....lb.	.16½	.16½	.15½
	.13½	.10½	.12	Extra, bbls.....lb.	.12½	.13	.12
.09	.12½	.10½	.11½	Extra No. 1, bbls.....lb.	.12½	.12½	.11½
.078	.11 4/5	.10 2/5	.11	Linseed, Raw, five bbl lots.....lb.	10.3	10.8	10.0
.077	.11 9-10	.09 6-10	.10½	Bbls c-1 spot.....lb.	9.9	10.4	9.6
.076	.10½	.09	.09 7-12	Tanks.....lb.	9.1	9.6	8.8
	.09½	.09½	.09½	Lumbang, Coast.....lb.	.09½	.09½	.09½
.33½	.47½	.44	.46½	Menhaden Tanks, Baltimore.....gal.	.42½	.46	.42½
	.90	.10	.36½	Blown, bbls NY.....lb.	.09	.09	.09
.43	.70	.67	.68½	Extra, bleached, bbls NY.....gal.	.70	.70	.67
.39	.66	.63	.62	Light, pressed, bbls NY.....gal.	.63	.64	.63
.37	.66	.69	.67½	Yellow, pressed, bbls NY.....gal.	.66	.67	.66
				Mineral Oil, white, 50 gal bbls			
				Russian, gal.....gal.	.40	.60	.40
.14	.18½	.14½	.17½	Neatsfoot, CT, 20° bbls NY.....lb.	.95	1.00	.95
	.13½	.10½	.12	Extra, bbls NY.....lb.	.18½	.18½	.18½
	.16½	.12½	.14½	Pure, bbls NY.....lb.	.12½	.12½	.12
.08	.18½	.10	.13½	Pure, bbls NY.....lb.	.15½	.16½	.15½
.07½	.17	.08½	.12	Oleo, No. 1, bbls NY.....lb.	.13½	.17½	.13½
.07½	.14	.08½	.10½	No. 2, bbls NY.....lb.	.12	.15½	.12
.83	1.75	1.40	1.48½	No. 3, bbls NY.....lb.	.11	.14	.11
1918	2.00	2.45	2.15	Olive, denatured, bbls NY.....gal.	1.18	1.25	1.30
.07½	.10½	.08½	.09½	Edible, bbls NY.....gal.	1.75	2.00	1.75
.08½	.09½	.09	.09½	Foots, bbls NY.....lb.	.09½	.10	.09½
.07	.08½	.07½	.08	Palm, Kernel, Casks.....lb.	.09	.09½	.08½
	.08½	.07½	.07½	Lagos, 1500 lb casks.....lb.	.08	.08½	.07½
	.14½	.12	.12	Niger, Casks.....lb.	.07½	.07½	.07
	.15½	.14½	.15	Peanut, crude, bbls NY.....lb.	.12	.12½	.12
	.16½	.12½	.14	Refined, bbls NY.....lb.	.14½	.15	.14½
	.14½	.10	.12	Perilla, bbls NY.....lb.	.13½	.13½	.13
	1.70	1.70	1.70	Tanks, Coast.....lb.	.12	.12	.10½
.63	1.05	1.00	1.01	Poppyseed, bbls NY.....gal.	1.70	1.75	1.70
	.90	.82	.87	Rapeseed, blown, bbls NY.....gal.	1.04	1.06	1.01
	.85	.76	.80½	English, bbls NY.....gal.	.92	.92	.87
.06½	.10	.09	.09	Japanese, bbls NY.....gal.	.90	.90	.82
	.09½	.08½	.08½	Red, Distilled, bbls.....lb.	.09½	.10½	.09½
	.50	.50	.50	Tanks.....lb.	.09	.09½	.08
	.47	.43	.45	Salmon, Coast, 8000 gal tks.....gal.	.50	Nom.	.50
.08½	.13	.11½	.12½	Sardine, Pacific Coast tks.....gal.	Nom.	.45	.45
	.14	.14	.14	Sesame, edible, yellow, bbls.....lb.	.12½	.13½	.12
.34	.40	.40	.40	White, bbls.....lb.	.13	.13½	.15
	.09½	.09½	.09½	Sod, bbls NY.....gal.	.40	.40	.40½
.06½				Soy Bean, crude.....lb.	.09½	.09½	.09
	.12½	.10½	.12	Pacific Coast, tanks.....lb.	.12½	.12½	.12
	.11	.10½	.10½	Soy Bean, crude, bbls NY.....lb.	.10½	.10½	.10½
	.13	.12	.13	Tanks NY.....lb.	.13½	.13½	.13½
.70	.85	.84	.84½	Refined, bbls NY.....lb.	.84	.85	.84
.68	.82	.79	.80½	Sperm, 38° CT, bleached, bbls	.79	.80	.79
				NY.....gal.			
1916	.13½	.11½	.12	45° CT, bleached, bbls NY.....gal.	.11½	.11½	.11
				Stearic Acid, double pressed dist			
1916	.14	.11½	.12	bags.....lb.	.11½	.12	.11
1916	.15½	.13½	.14	Double pressed saponified bags	.11½	.12½	.11½
.07½	.13	.08½	.11	.....lb.	.13½	.14½	.13½
.06	.09	.07½	.08	Triple, pressed dist bags.....lb.	.10½	.10½	.10½
.07	.11	.08½	.10	Stearine, Oleo, bbls.....lb.	.09½	.09½	.09½
.09	.10½	.08½	.10	Tallow, City, extra loose.....lb.	.11½	.11½	.11½
.09½	.12½	.10	.11	Edible, tierces.....lb.	.10½	.10½	.10½
	.08½	.07½	.07½	Tallow Oil, Bbls, c-1 NY.....lb.	.11½	.11½	.11½
.04½	.11	.11	.11	Acidless, tanks NY.....lb.	.10½	.10½	.10½
.05½	.14	.14	.14	Vegetable, Coast mats.....lb.	.08	Nom.	.08
	.78	.78	.78	Turkey Red, single bbls.....lb.	.11	.12	.1
.52	.80	.80	.80	Double, bbls.....lb.	.14	.16	.14
.48	.76	.76	.76	Whale, bleached winter, bbls	.78	.80	.78
				NY.....gal.	.80	.82	.80
				Extra, bleached, bbls NY.....gal.	.76	.78	.76
				Nat, winter, bbls NY.....gal.			

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BOSTON

July is always a quiet month, especially among the textile manufacturers in New England due to the fact that many shut down for vacations and overhauling of their plants during this month. The cotton and woolen business is extremely quiet, and the report is that those who have been operating have made no money during the first six months of the year. The shoe and leather business has improved considerably and is doing better than it has for some time.

The solvents, such as wood alcohol and denatured alcohol, are perhaps the most active items.

Blue vitriol has been in exceptionally good demand, probably due to a short market. Blue vitriol has been commanding a premium of anywhere from 7c to 7½c a pound in this market. Collections seem to be fair.

KANSAS CITY

Inquiries are active and there is a feeling of optimism in this territory, and the increased business has made itself felt in numerous emergency demands from concerns who felt business would not be so active and now find themselves in need of raw material. Numerous stocks of blue vitriol at low cost keep this market from showing the effect of the advances recorded in the east, and supplies of this are plentiful.

Potash nitrate is quietly being offered at concessions below the quoted market. Naphthalene supplies are short and in demand. Sodium fluoride is weak, and offered at concessions in this market. Copper carbonate is beginning to move but the demand does not seem to be as great or active as last year. The epidemic of consolidations are effecting a good many smaller distributing concerns who find their outlet for merchandise becoming narrower.

ST. LOUIS

As might be expected in St. Louis, movement of chemicals during July was slightly less than during the preceding month. There have been very few price changes of note. Castor oil declined ½c per pound to a 14c less carload basis. The tin market continues weak, tin oxide dropping to 53c per pound. On the other hand, lead oxide showed firmer, advancing ¼c per pound. Linseed oil is very strong and advancing toward the end of the month. Borax continued at a low level of 2¾c per pound. Collections were satisfactory, but not appreciably above average.

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NEWARK

General business conditions are fairly good and for the most part bid fair to continue at least on the basis of the present lines.

Textile disturbances seem to continue. Business can be classed as fair and apparently is just about the same as it was a year ago. Silk seems to be doing better than either cotton or wool but there is a general complaint that there are too many in the business and that they are producing more than the market can comfortably absorb.

Chemical prices are very steady, especially on raw materials. The volume for July, while fairly good, will not be as heavy as June, but the July 1928 sales, compared with 1927, are from twenty per cent. to twenty-five per cent. better. It seems hard to get anyone to predict what the immediate future is likely to bring forth in this industry. Collections are reported fair to good.

Most of the leather trade state that business is just about fair. The volume for July 1st is not as great as that for June, but July this year, compared with July 1927, shows a considerable improvement. The immediate outlook for better business for the most part does not seem to be very encouraging to the majority of those engaged in the industry. Some few say that business is very satisfactory and they have nothing to complain of, but these are the ones that are running on special lines for which there is a great demand.

PHILADELPHIA

There are comparatively few big spots in the Philadelphia industrial chemical market. Some falling off in the volume of new business has been noticed since the first of July, but it is not unusual at this time of the year. Compared with the same period of former years, conditions have proven very satisfactory. There seems to have been a slowing up in the textile industry towards the last week or so and leather trades still remain quiet, while demand for paint materials has been satisfactory up to the last week or so. There is now a light falling off and the business is not as good as it was. There have been a few noticeable items in the trade this past month, such as naphthalene, which have been extremely scarce and hard to get, the price, however, remaining about the same. This holds true also of copper sulfate. The demand has been unusually heavy, and it is predicted that next year the demand will be even larger. Castor oil has eased off a 1/2¢ per lb.

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Belgian Market for Plastic Materials

Previous to the end of 1925, the Belgium market for plastic materials was practically limited to celluloid and similar products, partly for the manufacture of films, and partly for the production of inexpensive combs and toilet sets, states a report from Consul W. C. Burdett, Brussels, Belgium.

Molded composition articles of various descriptions have been offered in the past few years and not only are the prices reasonable but the high finish, artistic design, and lasting polish of these goods have considerably facilitated their distribution. An enterprising Brussels concern was quick to realize the volume of business and installed a model factory to turn out molded articles of all descriptions. Foreign competitors in these lines now seriously feel the increased competition of Belgian made composition articles.

At present the plastic materials worked up are generally casein solids, although some pyroxylin plastics are used for special purposes. Phenol plastics have been tried and the results were satisfactory, although it appears that supplies are not easily obtained and that prices generally are too high for Belgian market conditions. The activity of the firm mentioned above has completely changed the conditions in the market of plastic materials. Consumption of pyroxylin plastics has fallen considerably while larger quantities of casein solids and other plastics are now consumed. The United States trade keenly feels the change and imports of plastics from America are constantly declining.

Little is done by American concerns to bring to the Belgian public the merits of their lines and American composition articles are practically unknown on this market. Most local consumers have no knowledge of the progress plastic art has made in the United States. The market, however, is very receptive to American goods in general, and they are generally proffered to articles of any other foreign nationality when conditions are equal.

The full report by Consul Burdett has been published by the Chemical Division as No. 33 in the series, "World Trade in Plastics". Copies may be obtained by properly accredited American firms from the nearest District or Co-operative Office of the Bureau of Foreign and Domestic Commerce.

Italian manufacturers of dyes and explosives who control production in their own country have concluded an agreement with German, French and Swiss producers and are now included as the fourth member of the international dyestuffs cartel, according to the Department of Commerce.

While no public announcement has been made that the contract has been signed, it is stated to be in operation, and dyestuffs imports into Italy are to be on the basis of last year's figures. Germany has been allocated 70 per cent. followed by France with 20, and Switzerland with 10 per cent. It is believed the same arrangement has been made for explosives.

JugoSlav interests control nearly one-third of Chile's nitrate plants, or about four times as many plants as Chilean interests, according to the Department of Commerce. British companies rank second, constituting a little over 18 per cent. of the total industry, followed by British-Chilean, with 9.2 per cent., Chilean with 8.5 per cent, Spanish with 7.2 per cent., and German with 5.2 per cent. Less than 5 per cent. of the 152 plants producing nitrates are now under American control.

Attention is called by Consul Bradford to the fact that the percentages given apply solely to ownership of the various plants and have no reference to production.

Although officials of I. G. Farbenindustrie have denied that they are re-opening negotiations with Imperial Chemical Industries, Ltd., reports from Germany state that conversations are proceeding between nitrate and potash syndicates and British producers of artificial fertilizers.

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"Dynamit" A. G. Reports Profit for 1927

"Dynamit" A. G. formerly the Alfred Nobel & Co. of Hamburg, and now affiliated with the I. G., presented its report for the calendar year 1927, showing gross profits to the amount of 5,112,000 marks, as against 5,080,000 marks for 1926. Business expenditures and taxes amounted to 2,550,000 marks. After deducting 840,000 marks for reserve fund, the company had 11,820,000 marks net profits from which a dividend of 6 per cent. was declared and 91,054 marks carried over for 1928. (Average value of the mark in 1926 was \$0.2380, in 1927, \$0.2376 and the current value is \$0.2384 in United States currency.)

The company reports that it co-operates closely with the I. G. Farbenindustrie which co-operation was further strengthened during the report year. The organization of the company, which is a merger of several explosives works, had been further improved along efficiency lines. All manufacturing activities of the constituent works not pertaining to the manufacture of explosives have been eliminated. The only exception is the Carbonit A. G. which continues to operate its cable works at Cologne and wire works at Altena, Westphalia.

Outside of explosives, the Dynamit company produces its auxiliary and intermediate products, such as glycerin and acids. During the year 1927 the process of rationalization resulted in closing several works. Various improvements are being carried out aimed at reducing prices of the products. Sales developed normally during the year, with export business showing considerable revival, reports Consul H. C. Claiborne, Frankfurt on the Main, Germany.

British Engineering Standards Association have just issued the following new specifications:

- Green Oxide of Chromium, No. 318—1928;
- Vandyke Brown, No. 319—1928;
- Vermilion, No. 320—1928;
- Paste Driers, No. 331—1928;
- Liquid Driers, No. 332—1928;
- Red Lakes, No. 333—1928.

The specifications contain clauses regulating the composition and also standard reception tests covering the purchase of the materials. Included in the specifications are appendices giving standard methods for conducting the tests.

Copies of the six new specifications may be purchased from the American Engineering Standards Committee, 29 W. 39th. St., New York City.

Department of Mines at Ottawa announces that potash salts have been discovered in a thick bed of rock salt which was being bored in search of oil and gas at Gautreau village, Westmoreland County, New Brunswick.

The deposit is located in the belt that runs along the Northumberland Straits littoral in which the Malagash deposits lie. The general opinion is that if potash can be found in commercial quantities in the two provinces of Nova Scotia and New Brunswick, the Canadian Maritimes will have an industry of great value to the British Empire.

Tariff Commission orders an investigation of the cost of production of barium chloride.

According to information available at the Commission's offices, Germany is the principal source of barium chloride. Imports of the product in 1927 were over 3,000,000 pounds, the Commission said, and it is dutiable at one and one-quarter cents under paragraph 12 of the 1922 Tariff Act.

Crude feldspar sold or used by producers in the United States in 1927 amounted to about 202,497 long tons, valued at \$1,424,755, or \$7.04 a ton, according to the United States Bureau of Mines, Department of Commerce. These figures show a decrease of 4 per cent. in quantity and 11 per cent. in total value compared with 1926.

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June Alcohol Production Decreases

Production of alcohol in June by members of the Industrial Alcohol Institute, comprising approximately 97 per cent. of the industry, totaled 6,213,790 gallons, a decrease of 738,086 gallons, or 11½ per cent, from June, 1927, output of 6,951,877 gallons.

Decrease in production was normal, when it is taken into consideration what the Government is restricting production this year to 85,000,000 gallons, against an output of around 96,000,000 gallons in 1927.

June production compares with May total of 5,417,278 gallons, an increase of approximately 12½ per cent. June, 1927, saw an increase of about 12 per cent. over May, 1927.

Sound position of the industry is indicated by the radical decline in inventories as of June 30, compared with the preceding year. Combined inventories of all members of the institute amounted to 9,438,496 gallons as of June 30, 1928, representing a decrease of 4,473,990 gallons, or 47 per cent., from the June 30, 1927, total of 13,912,486 gallons.

Combined inventories of the distillers stood at 14,028,213 gallons on May 31. Heavy shipments of alcohol reduced this total to 9,438,496 by the end of June, bringing about a decline of 48 per cent. Shipments in June, 1927, reduced inventories only 374,720 gallons, to 13,912,486 from 14,287,206 as of May 31, 1927, making a decrease of only 2½ per cent.

The addition of a nitrogen plant to their iron and steel works in IJmuiden, Netherlands, by the Koninklijke Nederlandsche Hoogovens en Staalfabriek, will constitute the first factory for the manufacture of artificial nitrates in the country, according to the Department of Commerce.

The work is expected to begin immediately under a separate corporation which is to be created for the administration of the new industry. The new factory shall be equipped to manufacture ammonia by separating hydrogen from coke oven gas and combining this synthetically with nitrogen from the air, thus making possible a large production of artificial fertilizer, which commodity has hitherto been imported from Germany and Chile.

The Brazilian Sugar Conference, in session at Recife (Pernambuco), has accepted the offer of the Chilean Government to place at the disposal of Brazilian sugar growers a large quantity of nitrate of soda for making experiments on a practical scale. The Tiuna sugar estate has been selected for the trials, and August as the most suitable month for the application of this nitrate.

It is expected that the use of Chilean nitrate will be a determining factor in the revival of the Brazilian sugar industry reports Consul Robert E. Bradford, Iquique, Chile.

O. S. Sleeper, formerly of the O. S. Sleeper Co., and until his present connection associated with the Buffalo Foundry & Machine Co., is appointed chief engineer, H. G. Trout Co., Buffalo, manufacturers of chemical equipment and vacuum apparatus.

Kathleen Rice makes rich strike of copper pyrite on her claim at Rice Island, Lake Wekusko, Manitoba. Said to be first time in history of Northern Manitoba that a woman has made a mineral discovery of importance.

Dyestuffs department, E. I. du Pont de Nemours & Co., Inc., announces three new colors: Lithosol Red CLM Paste, Pontamine Fast Blue SGL, and Ponsol Olive AR Double Paste.

Chilean government announces that sales of nitrates for season amounted to 3,148,000 tons, a record, and government closed fiscal year with surplus of 20,483,000 pesos.

Industrial Rayon Co. plans construction of plant at Covington, Va., to cost \$6,000,000 with equipment.

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E-lectric Pitch
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A-cetic Acid Glacial
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I-ron Liquor
F-lotation Oils
F-ast Color Acid
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I-ron Acetate
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Activities of French Motor Fuel Trade

The production of synthetic motor fuel is one of the reasons for the formation by French chemical interests of the *Comite des Industries Chimiques de France*, and co-operation with the *I. G. Farbenindustrie* is under way, according to the Department of Commerce. The *Comite*, is considering the acquisition of license rights to the coal liquefaction process used by the German industry.

As reported from French sources the *Comite des Industries Chimiques de France* formed in June, 1927, as a representative organization of the chemical industry of France, recently published its first report. The *Comite* acknowledges its origin as being due to the necessity of evolving a joint representation for the purpose of negotiations with the *I. G. Farbenindustrie*. Although the *Comite* is a loose organization, not based on concentration of capital, it has been able to serve the common interests of the French chemical industry in many ways.

The *Comite* confirms the German-French dye agreement which was concluded at the end of 1927. It reports further that steps have been taken for the production of synthetic motor fuels. The *Comite* is considering the acquisition of license rights to work the coal liquefaction process as employed by the *I. G. Farbenindustrie*.

Representatives of French chemical concerns and coal mines have already visited German works to study the operation of the process. A special investigation society, in which French industry is represented, is at present examining the possibilities for liquefaction of French coals. The problem involves the study of manufacturing costs which vary in France and in Germany. The *Comite* has also under consideration the utilization of chlorine plants built during the war, with a view to adapting them to industrial purposes.

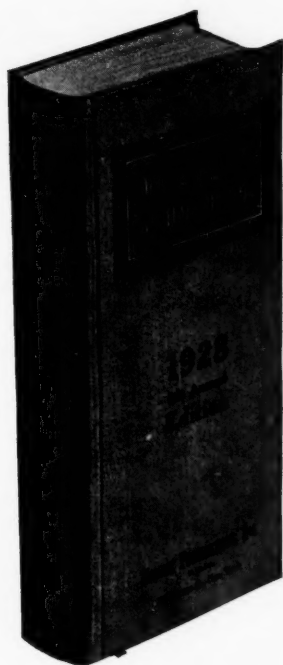
British exports of caustic soda during the first five months of 1928 increased to 57,157 short tons, as compared with 50,051 tons during the corresponding months of 1927. Shipments from the United States however show a marked decline having fallen from 23,076 tons in 1927 to 17,202 in 1928. German exports although comparatively small at present are increasing at a rapid rate. The German official statistics indicate a gain from 2,726 tons during the first four months of 1927 to 6,630 tons during the parallel period of 1928. A part of the apparent increase is due to the inclusion in the 1928 figures of the material supplied on reparations account.

Bureau of Chemistry and Soils, Department of Agriculture, announces that its chemists have devised practical means of using the oil from cull avocados (alligator pears). The oil obtained from the *Fuerte* variety of avocado by expression or solvent extraction has a dark-green color by transmitted light and is red by reflected light. It is probably too dark for use as commercial edible oil, although it has but little odor and pleasant fruity flavor. The oil, when saponified, makes a hard soap. Tests indicate that the oil does not become rancid during a year's storage under ordinary conditions.

United States Court of Customs Appeals affirms decision of United States Customs Court holding that *Pacific Chemical Co.* acted in good faith in entering certain cresol for consumption at its invoice value and awards company remission of additional duties paid upon appraisal at American selling price of competitive product.

A cable from Commercial Attache L. W. Meekins, Ottawa, dated July 13, stated that an Order in Council of June 29 designates ethylene glycol, when for use in the manufacture of Canadian products, as tariff item 788 and specifies that it is to be free of duty from June 29 until the end of the next session of Parliament.

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Italian Tanstuff Makers Association

It is reported that 30 out of the 32 Italian manufacturers of tanning extracts belong to the Associazione Italiana Industriali Tannici, according to Assistant Trade Commissioner E. Humes, Rome, Italy. These manufacturers have agreements regulating the domestic market and together with the French, Swiss, and Yugoslav manufacturers have recently formed an European cartel referring particularly to chestnut wood extracts. The international agreements among manufacturers cover the following points:

1. Purchase of raw material with price fixing for chestnut wood and a rational distribution of the exploitation zones with a view to economy in transportation costs.
2. Production quotas. The production quotas are based on a little more than half of the production capacity of the plants and in this proportion cover easily the requirements of the European tanners.
3. Price fixing and terms of sale on the domestic markets of the three countries which participate in the agreements. The domestic market of each country is reserved to the manufacturers of that country.
4. Price fixing and terms of sale in other European countries, which are regulated in proportion to the consumptive requirements of each market with allowance made for tanning materials other than chestnut extracts.
5. The formation of a large fund for propaganda purposes.

Imports of synthetic dyes for first six months of 1928 totaled 2,699,464 pounds, valued at \$2,145,410, according to a report by the Department of Commerce.

The imports by months are as follows. January, 415,156 pounds, valued at \$327,148; February, 478,407 pounds, valued at \$391,351; March, 378,191 pounds, valued at \$316,183; April, 633,815 pounds, valued at \$505,152; May, 382,233 pounds, valued at \$295,969; June, 411,622 pounds, valued at \$309,607.

Germany furnished 56.20 per cent. of these imports, the report shows. Switzerland furnished 25.94 per cent. Other countries from which dyes were imported are France, England, Belgium, Canada, Italy and the Netherlands.

Stocks of zinc in hands of American producers according to American Zinc Institute, were 44,468 short tons July 1, compared with 45,225 tons June 1, decrease of 757 tons.

Production for June came to 50,825 tons and shipments to 51,582 tons. Of the total shipments, 1,802 tons were for export. Metal sold but not shipped at end of June came to 11,687 tons. Average number of retorts operating in June was 66,079, with 65,580 retorts in operation at end of month.

American Zinc Institute's honorary foreign secretary estimates world stocks of zinc July 1 at 64,200 metric tons of 2,204.6 pounds each, compared with 66,200 tons June 1, a decrease of 2,000 tons. Stocks May 1 came to 66,100 tons; April 1 to 62,900; March 1, 61,100; January 1, 1928, 56,100 tons, and January 1, 1927, 43,600 tons.

First unit of \$8,000,000 plant of de Pont Rayon Co. at Ampt-hill, No. Carolina—the administrative building—will be completed within a month. Construction has been started by du Pont Engineering Co. At the peak of building operations, between 1,200 and 1,500 men will be employed.

Newport Chemical Works, Inc., announces a new dye, Anthrene Orange RC Paste, claimed to be identical in character and properties with the product classified as Colour Index No. 1169 or Schultz No. 792.

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Dyestuffs

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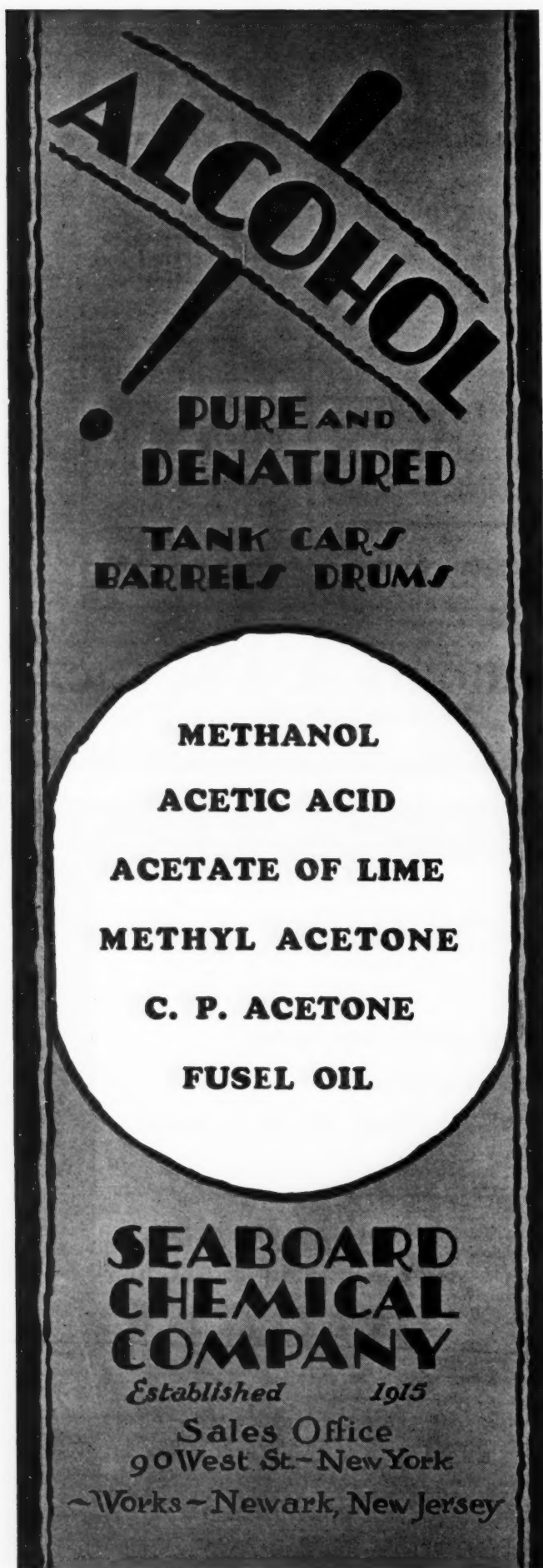
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Indigo and Sulfur Black in China

During the first quarter of 1927, large quantities of artificial indigo and sulfur black destined to Shanghai and Hankow were diverted in transit to Tientsin, thereby greatly increasing the imports of these commodities into this port during that period, reports Vice Consul A. I. Ward, Tientsin, China. It was to be expected that with a more normal movement of these commodities they would be imported in lesser quantities during the first quarter of 1928.

During the first quarter of 1928 only 4,011 piculs (534,800 pounds) of artificial indigo were imported into Tientsin, against 12,060 piculs (1,608,000 pounds) and 6,907 piculs (920,900 pounds) during the same period of the years 1927 and 1926 respectively.

Imports of sulfur black into Tientsin during the first three months of 1928 amounted to 9,933 piculs (1,324,400 pounds), against 12,560 piculs (1,674,700 pounds) and 1,084 piculs (144,500 pounds) during the same period of the years 1927 and 1926, respectively.

Aniline dyes valued at 380,609 haikwan taels (\$265,280) were imported into Tientsin during the first quarter, against 338,972 haikwan taels (\$234,500) and 128,304 haikwan taels (\$107,455) during the corresponding period of years 1927 and 1926 respectively.

June imports of synthetic dyes totaled 411,662 pounds with an invoice value of \$309,607, compared with 318,450 pounds, valued at \$253,054 in the same month of 1927, according to figures prepared to-day jointly by the Department of Commerce and the Tariff Commission. The total imports of synthetic dyes for six months ended with June were 2,699,464 pounds, valued at \$2,145,410, against 1,984,320 pounds, valued at \$1,643,703 for the same period last year. Of the June imports 395,439 pounds, valued at \$291,922, were entered through New York, with 9,098 pounds, valued at \$8,709, through Albany and 7,125 pounds, valued at \$8,976, through Boston.

Imports of aromatic chemicals in June totaled 13,157 pounds, valued at \$17,152, according to the report, while imports of color lakes totaled 800 pounds, with the invoice value not given and imports of medicinals, photographic developers, intermediates and other coal tar products were 92,407 pounds, valued at \$57,406.

Canadian exports of pulp and paper in June amounted to \$15,502,067, a decrease of \$1,425,354 from the preceding month and \$552,615 from June, 1927.

Wood pulp exports for June were valued at \$3,939,810, against \$3,808,825 for May. Paper exports for June totaled \$11,562,257, against \$13,118,596.

Exports of wood pulp in the first half of 1928 were \$94,104,081, against \$85,009,814 in the first half 1927.

Exports of coal tar products from Germany during 1927 were valued at 293,076,000 marks, and for the first four months of 1928 such exports were valued at 104,267,000 marks, according to the Department of Commerce.

Exports of dyes during 1927 were valued at 231,183,000 marks, and for the first four months of 1928 dye exports were valued at 83,118,000 marks.

Department of Commerce announces that 4,143,579 pounds of tin oxide, valued at \$2,600,299 were produced in 1927. As compared with 4,788,334 pounds of tin oxide, valued at \$2,904,882 produced in 1925, the last preceding census year, these figures show decreases of 13.5 per cent. in quantity and 10.5 per cent. in value.

Dyestuffs Department, E. I. du Pont de Nemours & Co., announces two new dyes, du Pont Rhodamine B Extra for Lakes, and Leucosol Dark Blue BR Paste.

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I. G. Buys Interest in Lignite Works

I. G. Farbenindustrie has extended its source of raw materials by purchasing a large block of shares of the lignite works "Caroline," according to a report from Consul Hamilton C. Claiborne, Frankfort on Main.

This move by the I. A. Farbenindustrie has affected favorably all lignite stocks on the stock exchange, since it is thought that the German chemical trust intends to place itself gradually in possession of all, or the largest part, of German lignite resources so as to obtain complete control of the principal raw material for its hydrogenation products. Stock operators are, therefore, trying to anticipate the most plausible future investments of the I. G. in lignite, and are buying heavily in the stocks of such companies.

The recent lecture of Professor Bergius in which he forecast the future production of animal feeds from cellulose has aroused interest of speculators in stocks of cellulose companies with the result that stock exchange quotations of such stocks have shown a substantial advance.

The special potash port in Hamburg built by the State of Prussia on the left bank of the Elbe River at Harburg-Wilhelmsburg (Kattwyk-Hobe-Schaar) was formally turned over to the German Potash Syndicate after a successful trial operation period of three months, according to the Department of Commerce.

The new potash port consists of quays having a length of approximately 1,000 feet equipped with numerous cranes and facilities for storing 100,000 tons of potash salts. The storage facilities should be sufficient for the present requirements inasmuch as exports of potash salts via Hamburg amounted to 667,000 tons in 1927. In order to avoid caking of the salts the store houses have been equipped with a heating system to keep the air dry, the report states.

United States Gypsum Co., Chicago, and other importers of gypsum present testimony before Commissioner of Customs E. W. Camp, at Washington, to show that crushed gypsum is not in the same trade category as ground gypsum and should not be taken from the free list and made to pay a tariff rate. This testimony will be studied by the customs authorities and a decision announced shortly. The customs division of the Treasury issued an order June 13, transferring crushed gypsum from the free list to the dutiable schedules of the tariff law. This order will not be enforced until the importers' testimony and facts submitted by domestic interests have been studied.

The Finance Department, Government of India, passed a Customs ruling dated May 7, 1928, as follows:

"The words 'spirit' and 'spirits' whether used in items 30, 31 or 32 of the Statutory Import Tariff, Part 2, Schedule 2, of the Indian Tariff Act, 1894 (VIII of 1894), are not confined to ethyl alcohol but also cover all other forms of alcohol such as methyl, isopropyl, amyl and butyl alcohol," reports Trade Commissioner C. B. Spofford, Jr., Calcutta, India.

The I. G. has acquired from the Aluminium and Magnesium Fabrik A. G. a three year's license for the exploitation of the latter's process for the production of alloys of magnesium and the refractory metals.

It is understood that the alloy of chromium and magnesium has been proved to possess catalytic activity even superior to that possessed by platinum and osmium catalysts.

Magnetic Manufacturing Co. announces opening of a direct factory branch office at 211 N. Desplaines St., Chicago.

Swedish Match Trust, in co-operation with Grangesberg Mining Co., purchases control of large iron ore deposits in Chile.

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Customs Court Overrules Protest of Rhodia on Aluminum Sulfate Duty

Aluminum sulfate containing less than 15 per cent. of alumina with not more than the equivalent of one-tenth of 1 per cent. of iron is properly classifiable under the second clause of paragraph 6 of the tariff act of 1922 at three-eighths of 1 per cent. per pound, and not under the final clause covering "all other aluminum salts not specially provided for" at 25 per cent. ad valorem, according to the first division of the United States Customs Court in a decision overruling protest 224,682-G of the Rhodia Chemical Co., New York.

The question involves the construction of paragraph 6 of the tariff act of 1922, which reads as follows:—

Aluminum hydroxide, or refined bauxite, one-half of 1 per cent. per pound; potassium aluminum sulfate or potash alum and ammonium aluminum sulfate or ammonia alum, three-fourths of 1 per cent. per pound; aluminum sulfate, alum cake or aluminous cake, containing not more than 15 per centum of alumina and more iron than the equivalent of one-tenth of 1 per centum of ferric oxide, three tenths of 1 cent per pound; containing more than 15 per centum of alumina or not more iron than the equivalent of one-tenth of 1 per centum of ferric oxide, three-eighths of 1 cent per pound; all other aluminum salts and compounds not specially provided for, 25 per centum ad valorem.

Sindicato Nacional de Explotacion Forestal, S. A., has been formed in Mexico, backed by important local capitalists, to introduce modern processes for wood distillation, with a view to producing cheaper charcoal and at the same time utilizing the various by-products, reports Acting Commercial Attache G. Wythe, Mexico City.

Charcoal is the principal household fuel used throughout Mexico. It is estimated that the consumption in the Federal District alone is between 400 and 500 tons daily and in the remainder of the country it is estimated at 8,500 tons a day.

In its announcement in the press, the Sindicato Nacional de Explotacion Forestal, S. A., claims it will be able to reduce the price of charcoal by 50 per cent. Among the by-products which it is hoped to obtain are tar, acetate of lime, acetone, formaldehyde, as well as the raw materials for the manufacture of rayon and brushes.

Department of Commerce announces that 5,781,166 pounds of tartaric acid, valued at \$1,810,898, and 7,222,217 pounds of potassium bitartrate (cream of tartar), valued at \$1,653,653, were produced in 1927. As compared with 5,498,920 pounds of tartaric acid, valued at \$1,541,955, and 7,072,651 pounds of potassium bitartrate, valued at \$1,472,082, produced in 1925, the last preceding census year, these figures show increases of 5.1 per cent. in quantity and 17.4 per cent in value for tartaric acid and 2.1 per cent. in quantity and 12.3 per cent. in value for potassium bitartrate.

French chemical and dyestuff companies July 19 announce their withdrawal from an international dyestuffs holding concern which has been formed by German and Swiss dye trusts, according to the *Daily News Record*.

It was believed in Paris that the lack of action by the French Government respecting a chemical and dyestuffs tariff was responsible for the withdrawal of the French companies.

National Traveling Salesmen's Foundation, New York, announces a campaign to raise subscriptions to erect a home for aged and infirm traveling salesmen at Winston-Salem, N. C.

Chicago District Office, Bureau of Foreign and Domestic Commerce, moves to First National Bank Building, 38 South Dearborn St., that city.

Gaskill Chemical Corp., Brooklyn, is dissolved.



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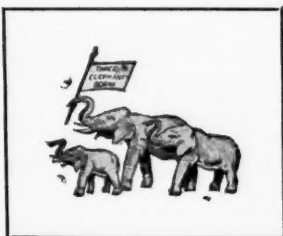
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Synthetic Nitrate Plant in Holland

The Netherlands are to have their synthetic nitrate plant, as an adjunct to the Koninklijke Nederlandsche Hoogovens en Staalfabriek, according to the Department of Commerce.

The addition of a nitrogen plant to their iron and steel works in IJmuiden, Netherlands, by the Koninklijke Nederlandsche Hoogovens en Staalfabriek, will constitute the first factory for the manufacture of artificial nitrates in the country, according to a report from Consul Pattie H. Field.


The work is expected to begin immediately, under a separate corporation which is to be created for the administration of the new industry. The new factory will be equipped to manufacture ammonia by separating hydrogen from coke oven gas and combining this synthetically with nitrogen from the air, thus making possible a large production of artificial fertilizer, which commodity has hitherto been imported from Germany and Chile.

According to Budapest reports quoted in Germany, the Bauxite Trust is negotiating with the I. G. concerning joint action in establishment of a fertilizer plant in Hungary. It is stated that experiments have proved that certain constituents of Hungarian bauxite can be used to advantage for the manufacture of fertilizers. A plant in Hungary would be remunerative since at present that country has to import its principal fertilizers. No details of the proposed plant or of the process which it is planned to use are yet available reports Consul H. C. Clairborne, Frankfort on the Main.

The German Potash Syndicate and the French Potash Society have formed a new potash sales organization for Czechoslovakia with the assistance of two Czechoslovak banks. The new enterprise is entitled Kali Aktiengesellschaft and has a stock capital of 750,000 crowns according to Commercial Attache F. W. Allport, Berlin, Germany.

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Potash Salts From Leucite Ores

The production of soluble potash salts and other chemicals from leucite ores will be undertaken in the near future by a new plant which is being erected at Novara, Italy, according to a report from Assistant Trade Commissioner E. Humes, Rome.

The production of soluble potash salts and other chemicals from leucite was undertaken several years ago in Italy, under the leadership of Baron Blanc. The plant established at Bussi is now in operation although it did not function last year owing to difficulties in obtaining supplies of chlorine for the manufacture of hydrochloric acid.

It is planned to extend the organization and operate the process in a plant at Civita Castellana which formerly belonged to the Societa Vulcanica. The equipment of the old Cengio plant will be removed to Naples for use by an American company which intends to produce alumina from leucite. The Jontecatini Co. has perfected a process for the treatment of leucite, and has acquired important deposits of this mineral.

A plant is being erected at Navara which is expected to be in operation by the end of the year. The Montecatini has not yet been willing to give out any detailed information as to the process, plant capacity, etc., but it is understood that the process has already been tried out on a semicommercial scale and that the potash will be treated with nitric acid to obtain potassium nitrate.

Report of the Office Cherifien des Phosphates of Morocco states phosphate monopoly shows production at 1,198,000 tons in 1927, of which France took 210,000, Spain 221,000, Holland 170,000, Germany 122,000 and Italy 105,000. In 1926 production was 886,000 in 1925, 712,000 and in 1924, 430,000. The whole industry dates from since the war.

The report for 1927 estimates that European consumption of phosphate increased by 2,000,000 tons between 1923 and 1927, being reckoned for the latter year at 6,000,000. Of this total Morocco furnished 1,114,000, Algeria 894,000 and Tunisia 2, 938,000. The increase in French North African shipments since 1923 roughly corresponds to the increase in European consumption.

The net profit and loss account shows 96,500,000 francs on the credit side, of which 7,000,000 goes to the state for service of Moroccan railroad loans, 18,600,000 to amortization, 29,000,000 to special reserve for extensions and the balance to the Moroccan Treasury for various purposes.

Increasing amounts of coal tar creosote are consumed annually in the United States and despite an expanded domestic production, it is being imported from other producing countries, according to the Chemical Division, Department of Commerce.

In 1927 the domestic production was reported to be 76,305,325 gallons with a value of \$9,847,932, an increase over the 1926 output when 75,495,540 gallons, valued at \$9,767,537 were produced.

Imports in 1927 totaled 95,915,221 gallons with a value of \$15,381,494, an increase of almost 10 per cent. over the 1926 imports when 87,518,544 gallons were entered for consumption valued at \$11,720,397.

An American company is reported to have decided to erect a plant in Germany for the production of ethylene glycol under patents of the I. G. Farbenindustrie A. G. and in co-operation with the latter concern. According to the Department of Commerce, the American company is, also, negotiating with Th. Goldschmidt of Essen, which holds patents covering certain phases of glycol manufacture.

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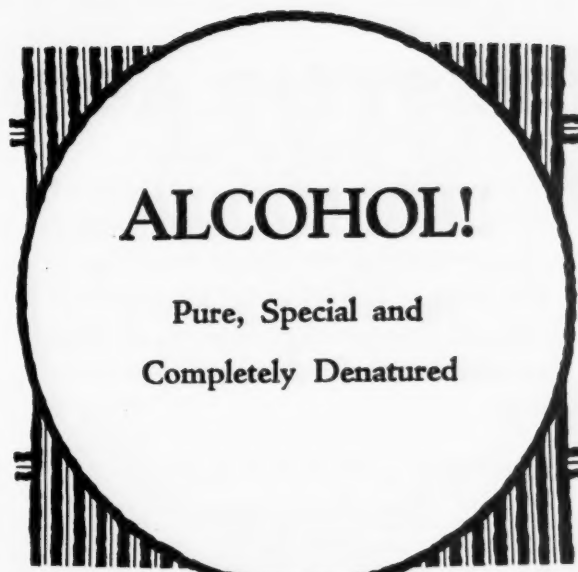
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Caustic Soda	Sodium Sulphide
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Cyanide, Sodium	Yellow Prussiate of Soda
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Imports of Dyes Into India

The monthly statement compiled by the collector of customs at Karachi, India, showing the value and quantity of aniline and alizarine dyes imported into Karachi during April and May, 1928, has been submitted by Vice Consul John R. Ives, Karachi.

The following table shows the imports according to country of origin and it is to be noted that the United States shared in the takings of aniline dye during the month of April although none was sent from this country into India through Karachi in March or May. There were no imports of synthetic indigo.

Alizarine Dyes

	April, 1928		May, 1928	
	pounds		pounds	
United Kingdom.....	6,160	\$1,070	7,280	\$1,268
Germany.....	32,856	5,682	17,610	3,145
Netherlands.....	18,730	3,133	27,380	4,870
Total.....	57,746	10,065	52,270	\$9,285

Aniline Dyes

Germany.....	18,900	\$5,950	12,290	\$4,265
Netherlands.....	21,912	12,605	37,100	18,988
Japan.....	250	181	...	...
Switzerland.....	...	...	1,000	498
Italy.....	...	...	672	601
United States via Atlantic coast.....	2,000	717	...	...
Total.....	43,062	\$19,408	51,062	\$24,352

A bill has recently been deposited with the French Chamber of Deputies which would lease for 30 years the State-owned sulfuric acid plant at Sorgues (Vaucluse) to the Societe Anonyme des Manufactures des Glaces et Produits Chimiques de Saint-Gobain, Chauny et Cirey; and the State-owned sulfuric acid plant of Port-de-Bouc (Bouches-du-Rhone) to the Societe des Etablissements Kuhlmann, for a similar period, reports Assistant Commercial Attache Daniel J. Reagan, Paris.

These two plants were constructed at the beginning of the war, with funds supplied by the State, under the technical direction of the French Powder Bureau and of the experts of these two companies, and were operated by these two organizations under contracts to supply the full output to the French Government during the war.

The plant at Sorgues was designed to produce 49,200 tons of sulfuric acid per month, and that at Port-de-Bouc 100 tons per day.

Italy outranks all other countries as a producer and consumer of copper sulfate, according to Assistant Trade Commissioner E. Humes, Rome. Production has increased from 31,000 metric tons pre-war to three times that quantity in 1926 with a productive annual capacity of 140,000 tons. Domestic production capacity is more than sufficient for home requirements and allows a considerable exportable surplus, but there is always a demand on the Italian market for copper sulfate in large crystals obtainable only from abroad. The foreign trade in 1927 registered an important increase, imports having increased from 8,238 metric tons in 1926 to 12,800 tons, while exports advanced from 8,086 to 10,826.

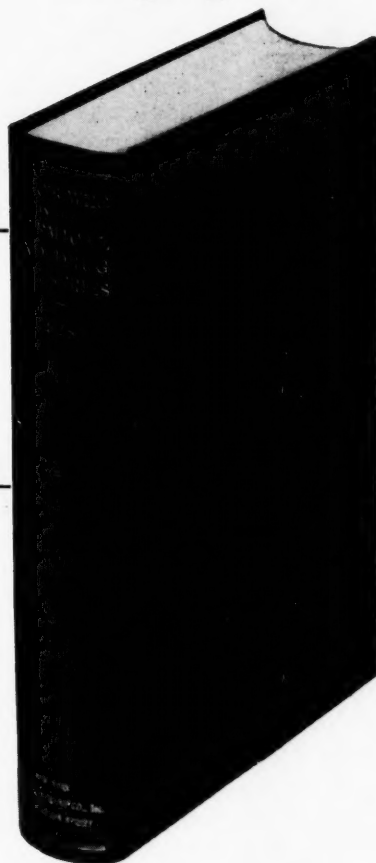
The use of calcium chloride for the laying of dust on roads is meeting with general favor in the Provinces of Ontario and Quebec, Canada, reports Assistant Commercial Attache Oliver B. North, Ottawa. Imports of this material are steadily increasing. About three-fourths of the imports are from the United States. Prior to February this material was dutiable at 15 cents per hundredweight under the general tariff. It is now admitted free of duty in flake form for use on roadways.

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Swedish Pulp Industry Unsettled

Since the settlement of Sweden's labor troubles in the chemical pulp industry the market has not recovered to the extent anticipated, it is maintained in that country, according to the Department of Commerce.

The attitude of British buyers is held largely responsible for this condition, inasmuch as they have been holding off—apparently believing that prices would again decline to the level existing before the lockout. Swedish mills, on the other hand, assert that prices are still too low rather than too high, and are showing a firm front.

During May sales of sulfite pulp totaled 47,000 metric tons (metric ton equals 2,205 pounds) as against 35,000 tons in April. Of this amount only 3,000 tons went to British buyers, while 30,000 tons went to the United States and 12,500 tons to the European continent.

The United States quota for the last half of the year is set at 90,000 tons and the continent's at 75,000 tons. Sales of sulfate during May totaled 28,000 tons as against 24,000 tons in April. Approximately 18,000 tons have been sold for 1929 delivery, the United States having taken 15,500 tons of this amount.

Swedish sulfate mills are reported to have only 42,000 tons of this year's output unsold.

The Aicher process for extraction of oil from coal is to be introduced into British coal fields by the Franco-British Oil Trust, Ltd., according to a report from Trade Commissioner H. S. Fox.

It is authoritatively reported that the Franco-British Oil Trust (Ltd.) has acquired the rights in the British Empire for the Aicher process of extraction of oil from coal. It is understood that this process, which was developed by a member of the firm of Thyssen & Company, of Germany, has been in operation in that country for some three years. It is understood to be a low temperature carbonization process essentially, with a satisfactory recovery of oil products on a commercial basis. A plant is expected to be erected in connection with one of the leading Scotch collieries under the auspices of the Franco-British Oil Trust, some time in the near future.

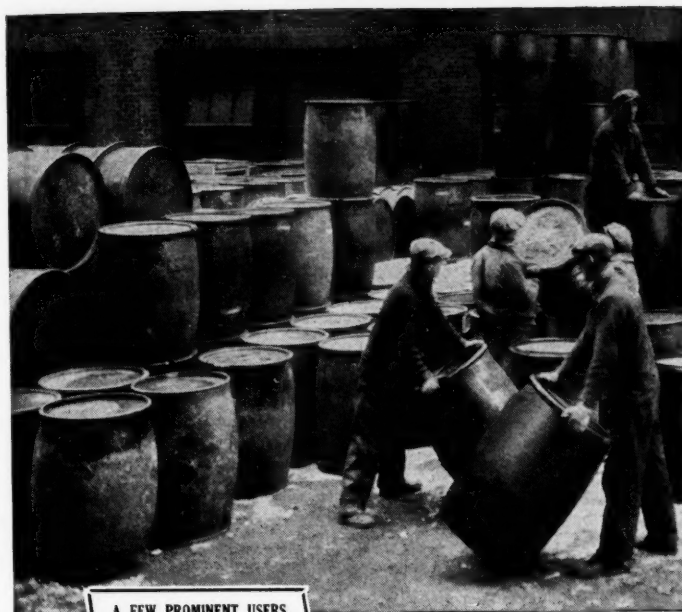
The company which has acquired the British rights of this process was originally formed in 1911 to acquire certain oil concessions in Algeria. These concessions were later forfeited, and the bearing properties in Rumania.

Canadian imports of aniline and coal tar dyes during fiscal year ended March 31, were as follows: from Britain 100,187 lbs., value \$73,479; United States 1,632,598 lbs., value \$854,679; France 33,320 lbs., value \$14,503; Germany 799,153 lbs., value \$508,201; Switzerland 379,447 lbs., value \$204,976, Total 2,948,241 lbs., valued at \$1,657,845. This compares with the following imports during the previous fiscal year: from Britain 134,628 lbs., value \$84,383; United States 1,466,366 lbs., value \$876,919; France 162,371 lbs., value \$38,618; Germany 813,968 lbs., value \$588,907; Switzerland 313,700 lbs., value \$231,961, total 2,894,318 lbs., valued at \$1,823,249.

The Adria Soda plant in Monfalcone, Italy, which has been producing approximately 100 tons of caustic soda and 50 tons of sodium carbonate daily was recently absorbed by the Belgian Solvay Company through the purchase of the majority of the Adria shares, reports Vice Consul H. A. Bowman, Trieste. The Solvay Company operates a large alkali plant at Rossignano near Milan which is reported to be capable of meeting the entire Italian demand. It is said that the purchase of Adria Soda was made to eliminate competition and it is feared that the plant at Monfalcone may be closed in the near future.

Glidden Paint & Varnish Co., subsidiary of Glidden Co., will erect plant in Minneapolis.

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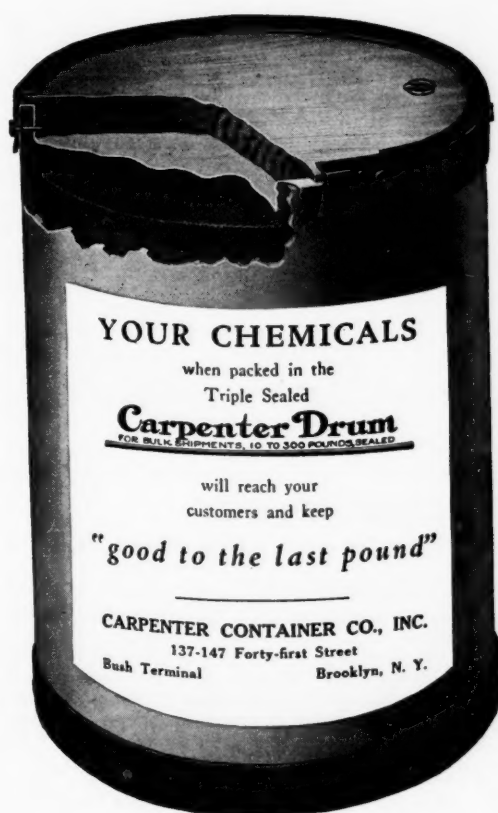
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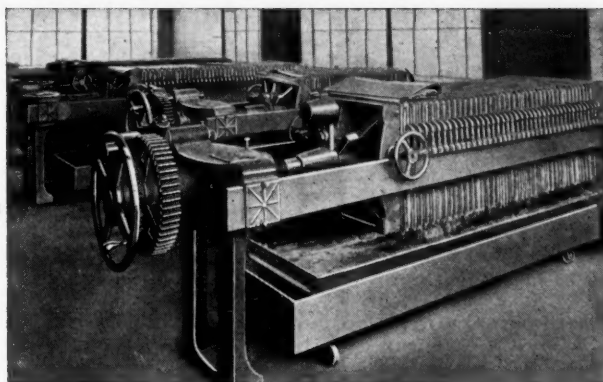
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New Nitric Acid Process in Italy

Two Italian firms have recently worked out processes for obtaining concentrated nitric acid direct from the oxidation of of synthetic ammonia, according to the Department of Commerce.

One process is a patent of the Ing. Fauser of the Montecatini and the concentrated nitric acid is being produced in the Meran and Novara plants of the Societa Italiana Ammonia of the Montecatini group. The 1927 production of concentrated nitric acid by this process is estimated at 12,000 tons in terms of 100 per cent. acid, about three-fourths of which was obtained in the form of 50-55 per cent acid in the Montecatini plants.

The remainder was produced at the Bussi plant of the Societa Azogeno on the patents of Ing. Toniolo. The Novara and Montecatini plants have a yearly capacity of 10,000 tons of nitric acid at 48 degrees Be. and another plant is now being put up by the Societa Italiana Ammonia at Mass, which will have an annual capacity of 3,000 tons. Ing. Toniolo produces 60-70 per cent. acid and the Bussi plant is also making liquid nitrogen peroxide. This new industry will make Italy independent of foreign sources of supply of nitric acid.

A further patent has been recorded by the I. G. Farbenindustrie concerning the production of synthetic rubber which is perhaps of interest as showing the trend of research and development in this phase of chemical science, reports Consul H. C. Claiborne, Frankfort on the Main, Germany. According to reports appearing in the English and German technical press, British Patent No. 286272 states that polymerisation of appropriate hydrocarbons such as isoprene, butadiene, and dimethylbutadiene is effected in an aqueous colloidal solution or suspension containing one or more electrolytes. Those suitable for use with albumen colloids are hydrochloric, sulfurous, phosphoric acids or their acid salts such as sodium bisulfite. Examples describe the use as colloids of glue, casein lime, casein, colloidal iron, alkali oleate, and saponin, and, as electrolytes, casein lime, sodium sulphate, potassium iodide, sodium chloride, or other alkali halide, tetrahydronaphthalene sulfonic acid, acetic acid, malonic acid, hydrochloric acid, sodium bisulfite, and phosphoric acid.

In the official Mexican statistics imports of caustic soda are combined with caustic potash. The bulk of the trade is in caustic soda, which is supplied almost exclusively by the United States and Great Britain, according to Acting Commercial Attache George Wythe, Mexico City. Statistics for the years 1923-1926 follows:

	1923	1924	1925	1926
	Metric	Metric	Metric	Metric
	tons	tons	tons	tons
United States.....	4,683	8,363	8,768	8,457
Great Britain.....	4,160	3,715	2,460	3,745
Germany.....	31	15	179	95
Other Countries...	8	17	12	105
	8,882	12,110	11,419	12,402

Diamond Match Co. reports for six months ended June 30, 1928, net income of \$817,310 after depreciation, amortization, federal taxes, etc., equivalent to \$4.92 a share earned on 166,000 shares of capital stock. This compares with \$813,660 or \$4.88 a share on 166,500 shares in first half of 1927.

Net income for June quarter was \$402,500 after above charges equal to \$2.42 a share on 166,000 shares against \$414,810 or \$2.50 a share in preceding quarter and \$400,827 or \$2.40 a share on 166,500 shares in second quarter of previous year.

Southern Cotton Oil Co. plans construction of new fertilizer plant at Decatur, Ala.

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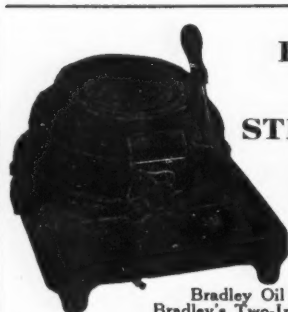
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British 1927 Dye Production

Shows Increase of 30 Per Cent.

While the British production of dyestuffs in 1927, at 39,551,756 pounds, showed an increase of 9,254,756 pounds or 30 per cent. over 1926, the import licenses for dyestuffs granted during the same period showed an increase of 757,769 pounds, or 19 per cent., according to statistics issued by the Colour Users Association of Manchester. This increase in both production and imports over the previous year indicates a substantial increase in British dyestuffs consumption, despite the prevailing depression in the textile trades. Comparative imports during the past few years, distinguishing the principal countries of origin, are as follows:

Imports of Dyestuffs into Great Britain

Year	Lbs.	Value Total
1921.....	2,677,505	£1,042,821
1922.....	3,234,893	1,103,819
1923.....	3,691,440	989,537
1924.....	3,036,234	770,943
1925.....	3,399,054	651,584
1926.....	4,232,587	944,007
1927.....	4,990,356	1,034,013

Note:- The statistics for 1925, 1926, and 1927 are probably representative of the total imports of dyestuffs during those years. Prior to 1925 certain reparations colors were imported which are not included in the figures given above.

The average price per pound of imported dyestuffs, excluding alizarine and synthetic indigo, increased from 47.94 pence in 1926 to 52.23 pence in 1927, indicating that the demand for imported colors is for a considerably better grade than was formerly the case, and probably is not due to any increase in the general price level. The following figures show comparative average prices during the past few years, as compared with 1913:

Year	Pence Per lb.	Per cent. increase over 1913
1913.....	11.7	...
1920.....	79.2	577
1921.....	66.7	470
1922.....	65.8	462
1923.....	49.8	326
1924.....	58.25	398
1925.....	42.99	267
1926.....	47.94	310
1927.....	52.23	346

One of the outstanding points made by the Chairman of the Colour Users Association at its annual meeting was a strong plea for more complete statistics of the production and consumption of dyestuffs in Great Britain, such as those published each year in the United States Tariff Commission's "Census of Dyes and Other Synthetic Organic Chemicals." Another important feature of the Chairman's remarks was the importance attributed by him to the necessity for greater amalgamation among British dyestuffs makers, similar to that which had taken place in the heavy chemical industries through the formation of Imperial Chemical Industries (Ltd.). While the leading British maker of dyestuffs is now included in the I. C. I., there are still several important companies outside of this amalgamation, and it is apparently the opinion of the leading color users that, in order to develop most efficiently the dyestuffs industry of the country, a further amalgamation of these producers, or at least a much closer working arrangement, is of vital importance.

Northern Ontario China Clay Corp., Ltd., capitalized at \$6,000,000 and with holdings of 400 acres, begins operations on kaolin deposits on the Mettagami River, northern Ontario. Laboratories are in charge of John C. Cloke and plant operations of H. S. Hancock, Jr.

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"WE"—Editorially Speaking

"What this country needs more than anything else is a unified and well defined national tariff policy,—one which will not be disturbed by the political fortunes of the two major parties." This, in a sentence sums up the principal theme of Mr. De Long's story. This question of a national tariff policy is not a new one, but it has come in for the attention of many prominent business men within the past few years. It is a fact, and this fact is borne out by the chart accompanying Mr. De Long's article, that the tariff line of demarcation becomes less sharply defined with each passing national presidential campaign.

If we were to believe some of the propaganda which is disseminated in this pre-election campaign we would be reconciled to the theory that the tariff is no longer a national problem and has been replaced by more "timely" subjects for the public consideration. While this is partially true, it will never be wholly so until some such arrangement as suggested by Mr. De Long has been arrived at. The ideal arrangement seems to be a plan following the middle course between the Republican policy of "the domestic manufacturer, right or wrong" and the Democratic and political economist platform of free trade for all.

In our June issue, the co-author of "Your Money's Worth", that human interest story of modern day business, expounded several very level-headed theories on buying by specifications. In this issue Mr. Schlink continues his discourse on this very manner of conducting the much abused purchasing department. While this plan, because of its ramifications, seems a little impracticable for the average small buyer it undoubtedly offers one possible solution for the present day system of corruption which seems to be woven in the American function of buying. Mr. Schlink is not so drastic in his theories as one of our prominent business men, who believes that "all sellers should insist on seeing all submitted prices when price concessions are demanded" and his beliefs are the result of a careful study of the entire system of purchasing.

Minus the capable assistance of our efficient Department of Commerce, many American concerns would go from one year's end to the next without taking cognizance of the doings of their com-

petitors in foreign countries. None deny that knowledge of this question is essential to the intelligent conduct of an export business, or for that matter, a domestic business which is not protected to the nth degree by a protective tariff.

To foster this work of the Department we have been running a series of articles on chemical conditions in foreign countries and in this issue the progress of the Canadian industry is presented by a man who has the entire situation at his fingertips. Figures don't lie; reference to those embodied in Mr. Cook's article are a mute tribute to the advance of the Canadian industry in the past decade.

No one need have any excuse for being hazy on the functions of an investment trust after reading what Dr. Switz has to say on the subject. One is impressed by the thoroughness of the work carried on

by these organizations and it does seem that they should be able to predict, with a fair degree of accuracy, the earnings of a company for the year to come.

The interest expressed at the mention of this subject in a previous issue, prompted us to arrange with Dr. Switz for a sequel to this article in our September issue.

A poll of the banking interests of the country on the question of "Do you favor mergers as economically sound?" would apparently result in an almost unanimous aye. The Sherman Corporation of Boston has prepared a very interesting review on the subject. Starting from what we presume was an unprejudiced stand on the subject the report develops into something of a one-sided statement in favor of the "ayes". There is always the feeling that financial interests are not entirely unselfish in their united stand in favor of consolidation. It would be interesting to learn the views of a group of manufacturers who, after all, are more directly concerned than are the bankers. It must be said that all the reasons advanced in favor of merger are sound and irrefutable. To the chemical industry, with its past and prospective record of combinations, this report should prove of great interest.

Drumming up interest in a market review story in these days of "steady and unchanged" markets is not the pleasant pastime that it was in the post war days of 1919 to 1921. Then, price changes followed in great rapidity, and a very presentable story could be prepared from culling over the movements of the market. This is not possible to-day and in writing on barium chloride and casein we feel that we have picked two articles of great interest to the trade from a price angle.

Oddly enough, they are both interesting for converse reasons. With barium chloride the interest centers in the efforts of American manufacturers to secure an advance in the duty and a subsequent advance in price; with casein, efforts are being made by consumers and importing factors to hold the market from any further upward movements.

SEPTEMBER FEATURES

Supplementing the article on investment trusts by Dr. Theodore M. Switz, our September issue will contain an article by the same author as a sequel to that appearing in the current issue.

Another of the series on chemical conditions in our competitive foreign markets will be published. Many of the more important countries have been covered to date, but several, notably Japan and Belgium are still to be covered. Conditions in the latter country will probably be discussed in our September issue.

We have secured the promise of William J. Orchard of Wallace & Tiernan Company to tell something of the work which is being done by his organization in the chlorine apparatus field. Mr. Orchard is highly recommended as an authority on this subject and we look forward with interest to publishing his thoughts.

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